ADAPTATION FUND

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PART I: PROGRAMME INFORMATION

Use of Nature-based Solutions to Increase Resilience to Extreme Climate Events in the Atlantic Region of Central America

Countries:	Belize, Guatemala, Honduras
Thematic Focal Area[1]:	Disaster Risk Reduction and Early Warning Systems
Type of Implementing Entity:	Multilateral Implementing Agency
Implementing Entity:	Central American Bank for Economic Integration (CABEI)
Executing Entities:	World Resources Institute (WRI) and Tropical Agricultural Center for Research and Higher Education (CATIE)
Amount of Financing Requested:	US$13,248,121.00

[1] Thematic areas are Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

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Program background and context

Geography, environment, and climate description

1. The project will be implemented in a trans-national geographical region focus of a disproportionate exposure to extreme weather events and unique in terms of vulnerability of local populations, common bio-physical conditions and relative isolation from regions inland in the coastal Atlantic region of Belize, Honduras and Guatemala. The project will support the implementation of adaptation measures in targeted areas and will develop tools and guidelines applicable to a regional policy scope. The activities pursued under the project could later form the basis for development of a portfolio of investments by the Implementing Agency (CABEI).
2. The region sits at the center of the hurricane corridor of Central America where tropical storms and hurricanes are causing increasing damage to ecosystems, settlements and livelihoods. There is scientific consensus in that intensification of extreme weather events is a consequence of warming of sea surface and the lower troposphere. The target region shares biophysical characteristics, and vulnerability to these extremes.
3. The region has also experienced an accelerated process of degradation and loss of natural ecosystems. Guatemala has an area of 10.8 million hectares, and forest cover of 34.07% (GIMBOT 2014) with agriculture as the most dominant land use is (37.6 % of the total area of land). Guatemala is also experiencing one of the highest deforestation rates in the region (93,127 ha/year) and most of the forest is being converted to agricultural land (palm oil, sugar cane and banana plantations). Other factors that have contributed to forest deforestation and degradation includes urban growth, forest fires, wood fuel consumption, drug trafficking, unclear land tenure and a weak forest sector economy. Guatemala has a restoration strategy with a goal of 2.1 million ha under restoration by 2030.
4. Honduras is the second largest country in Central America, and it has an area of 112,492 km2. According to the National Institute of Statistics (INE 2019), Honduras has a population of 9.2 million inhabitants where almost half of the population (44%) live in the rural countryside. Honduras is currently the Central American country that has the largest forest cover with 5.4 million hectares of land covered in forest (ICF Forest Map, 2014) which is equivalent to 48% of the total area of the country. Due to the strategic importance of forests for climate change mitigation and adaptation, Honduras has officially pledged to restore 1 million hectares of forest by 2030 as part of its National Determined Contributions (NDC). Other national policies also address the importance of implementing restoration activities including the National Development Plan and the REDD+ Strategy.
5. Belize is 2.3 million hectares in size with a population of 420,000 people, giving it the smallest population density in the region. Roughly 64% of the country is covered by forests. Belize holds a key position within the Mesoamerican Biological Corridor and is part of the Selva Maya. Logging once dominated the economy, but now agriculture is the leading land use activity and backbone of the economy, tourism having all but collapsed during the pandemic. High deforestation rates are attributed to rapid agricultural expansion, especially in sugar cane, but once included citrus and bananas. Large amounts of corn and beans are also grown for export. Riparian forests are particularly endangered by urban expansion, and small to large-scale agriculture, a situation worsened by increasing river gravel mining.

Weak enforcement of forest legislation and poor coordination among ministries encourages deforestation

6. In consultation with, and at the direction of, the Ministries of Environment of the countries in the affected region (Belize, Guatemala, and Honduras) an adjoining area on the Atlantic coast of the three countries (see figure 1) was selected as a target area for the project in consultation with provincial authorities and the Coastal management Authority of Belize. The area, is already experiencing substantial impacts from extreme events, is home to a population whose livelihoods and assets are vulnerable to the consequences of these events and also has affected forested areas that can if intervened contribute to a reduction in vulnerabilities. It also meets development priorities of the government authorities.

7. Biophysical description of the target area[2].

   - **Belize:** The area in Belize is the Monkey River watershed in the Toledo district which borders with Guatemala and is located just north of the Amatique Bay. The watershed has several important ecosystems including: (a) primary forest; (b) upland secondary forest; (c) freshwater riverine habitat; (d) lower reach estuarine vegetation and mangroves. The highest upland watershed area contains expansive forests, which are primary in the highest elevations and secondary in the piedmont of the Maya Mountains. These forests have important lumber species and a broad panoply of broadleaf trees. Today much of this area is protected as the Payne's Creek National Park. The delta is home to several settlements on the draining area toward the coast providing them with freshwater and fisheries.
   - **Guatemala:** Cerro San Gil drains into the Amatique Bay. It is one of the most important areas of the humid tropical forest in the Caribbean slope of Guatemala. Cerro San Gil covers an extension of almost 31,000 ha; the Reserve provides water services to the nearby communities. The Core Area of Cerro San Gil gives protection to Río Las Escobas basin, only source of drinking water for Puerto Barrios and Santo Tomás de Castilla, also as water sources of more than 40 local communities. Additionally, the forests of Cerro San Gil, protect the Navigation Channels of Santo Tomás de Castilla Port and Puerto Barrios, controlling siltation, providing for freshwater, fisheries and enriching the organic soils in the lower part of the watershed.

     Cerro San Gil gives shelter to almost 50% of Guatemalan biological diversity including56% of amphibian species; 48% of reptile species, 67% of bird species and more than 70% of mammal species of Guatemala live the forest of Cerro San Gil. Because of its topography, Cerro San Gil is also a fundamental site for neo-tropical migratory birds, with more than 100 migratory bird species using Cerro San Gil as a hibernation or passing place. The Rio Dulce National Park is adjacent to Cerro San Gil between Lake Izabal and Amatique Bay. The canyon at the mouth of the river on the bay offers a scenic beauty unique for its vegetation, and for being a **refuge for various native and migratory birds**. It also drains into the

[2] This section describes the key biophysical characteristics. The socio-economic context of the target area is presented in part II.A.

coastal areas where the settlement of Livingston is located providing its source of freshwater.

- **Honduras**: The Cusuco National Park and buffer areas in the Merendon Municipal reserve has its drainage area toward the Atlantic Coast on the southern section of Ametique Bay where the settlement of Puerto Cortes is located. The Park is 23,400 hectares protected area in the Merendon mountains of northwest Honduras. The Park ranges from just above sea level in the west to 2,425 meters (7,956 ft) in the middle. The Park comprises 7,690 hectares (core zone surrounded by a 15,750 hectares buffer zone. Cusuco encompasses several major habitats, including semi-arid pine forest, moist pine forest, moist broadleaf forest and dwarf forest (*bosque enano*) at elevations above 2,000 meters. The Park is part of the Meso-American biodiversity hotspot (Conservation International 2006), a region characterized by exceptional species richness. Cusuco also has great diversity of habitats and high beta diversity in many groups due to the large elevational gradients in the park.
- The area centered around the Ametique Bay has conditions that make it a useful target for the project activities. It has been historically vulnerable to the effects of weather extremes, it has a vulnerable population, it contains montane, riparian and mangrove areas that offer a target for nature-based solution and has the potential to provide useful information for future decision making and replication.

Socioeconomic context

1. The three areas selected for implementing adaptation measures are in land with a substantial population of Garifunas (see figure 1.2), a mixed African and indigenous people. It is also home to Creole and other communities including indigenous peoples (Y'axche and Q'eqchi Maya) that live along the target area of the three countries. Women have a strong participation in community issues and hold leader community positions at the sites in Belize and Honduras. While there is a diversity of communities and culture, they all share a relatively common bio-physical environment and experience a relative isolation from their capital cities.

Figure 1. Prioritized watersheds in each country.

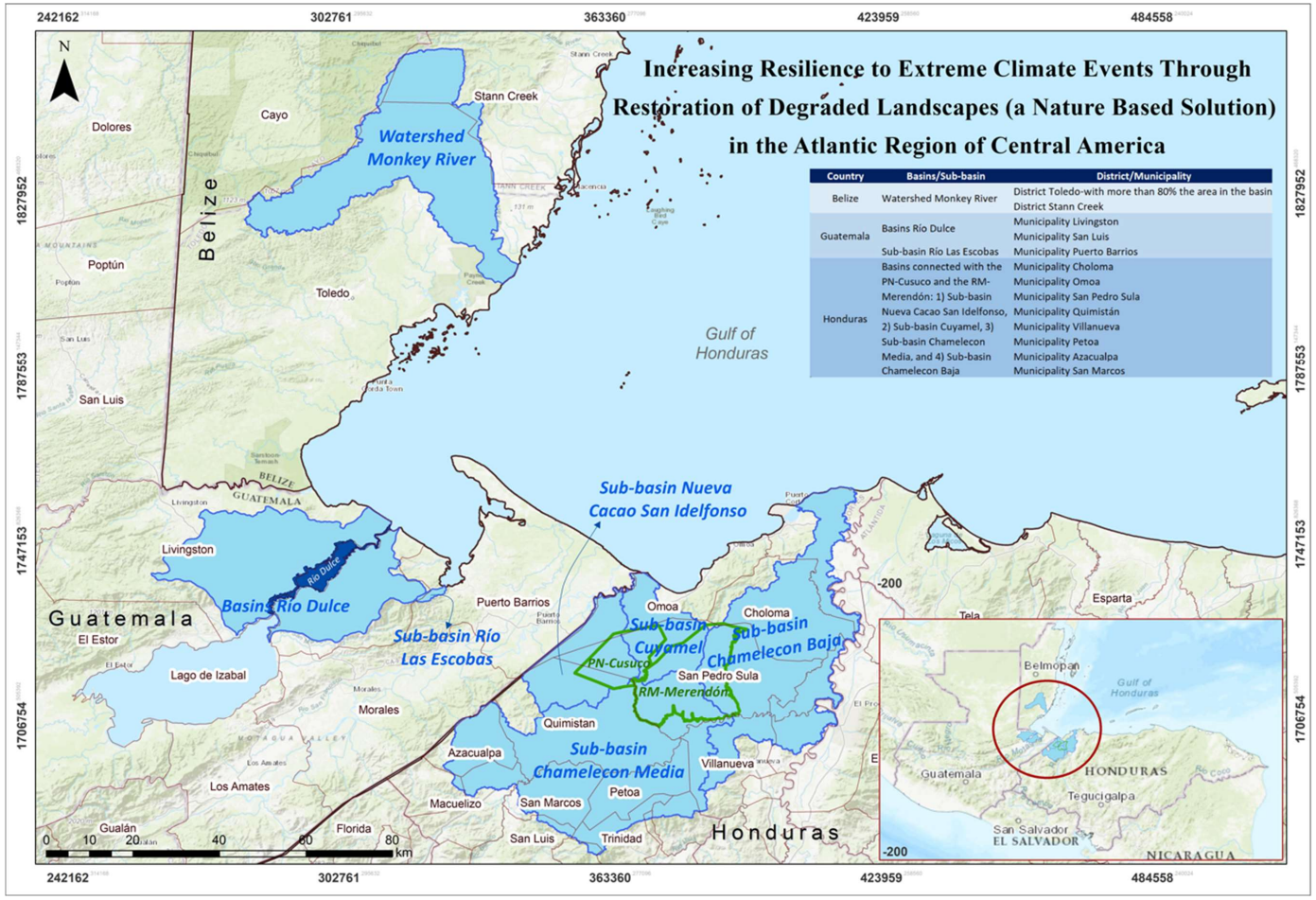
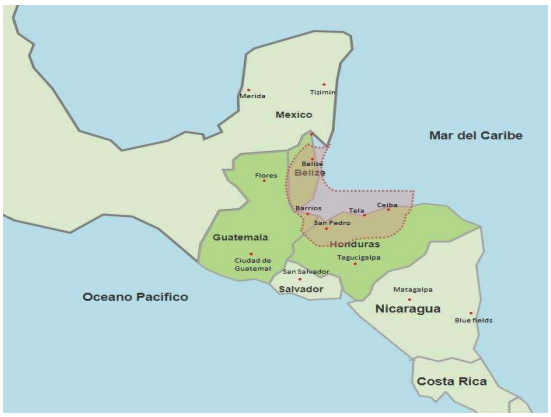


Figure 2. | Neighboring character of the target area

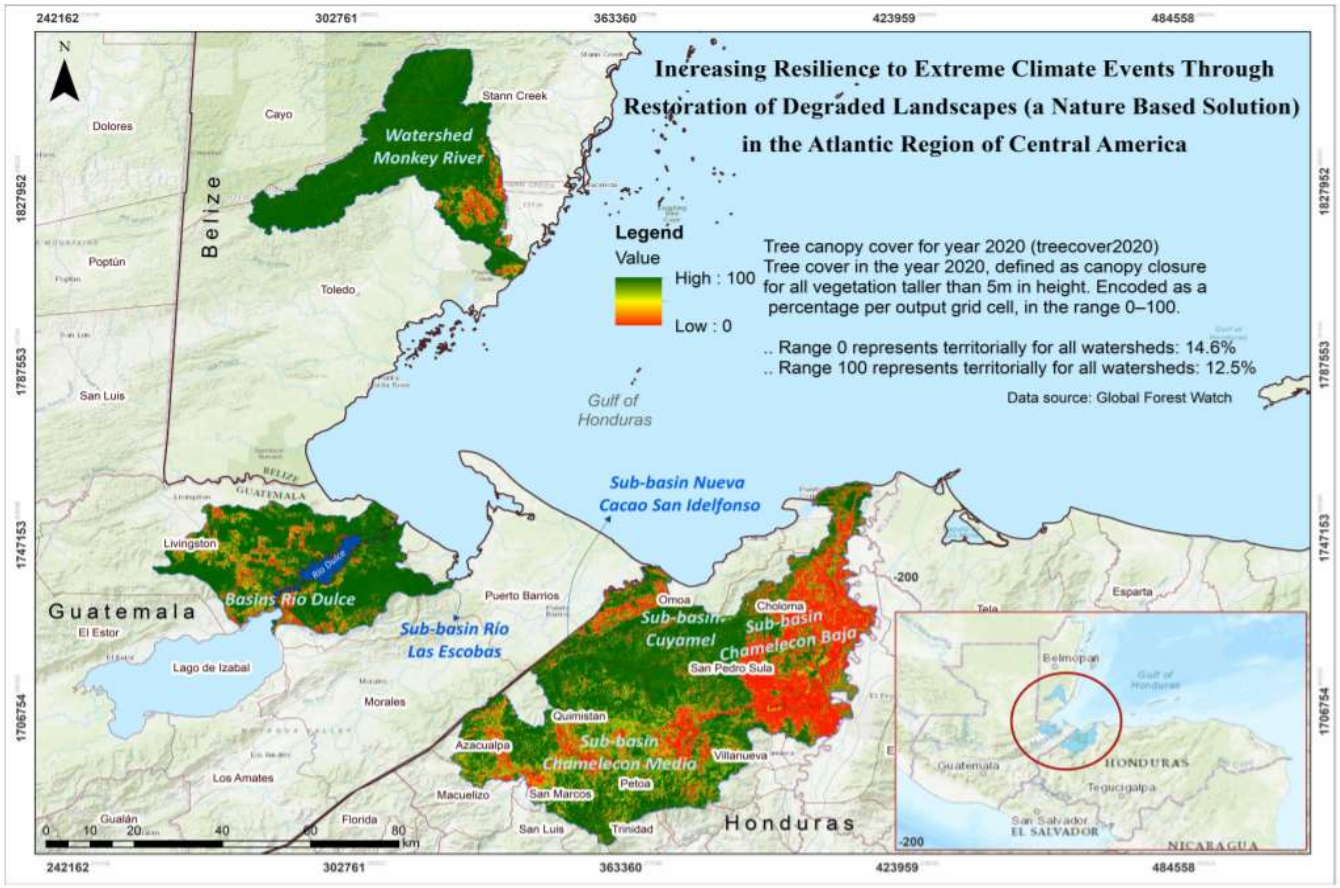


(Highlighted area is inhabited mainly by Garifuna, Maya Y'axche and Q'iqche, Creole and other indigenous groups)

2. The population in the coastal area of the region is composed mainly of small landholders from minority groups, including Garifuna, indigenous groups of Maya descent, and mestizos. Their income is below the national average[3] and access to education and health services is also restricted (Bouroncle et al. 2017 for Guatemala and Honduras). The adaptive capacity of these people to chronic changes of temperature and rainfall is intermediate associated to the dependency of rains for corps, low income and low technical capacities . The scenario of increased impacts of extreme weather events on the coast of the Gulf of Honduras is likely to be amongst the most onerous for populations with limited financial and human capacity to adapt to these extremes.
3. Honduras and Guatemala's, Human Development Index (HDI) are 0.65 and 0.62, in the low range of the index; while Belize's is 0.72, in the low-high range (UNDP, 202). But the area along the Atlantic Coast has even higher rates of poverty and lower access to services, compared to the national averages, both in Guatemala and Honduras; it is also home to economically disadvantaged racial minorities and indigenous groups. The project area in Belize, has a high share of ethnic (Maya, Garifuna, and Creole) minorities.
4. Honduras is divided administratively into 18 departments out of which 5 of these departments are located in the Atlantic coastal zone of Honduras. Honduras is also home to nine indigenous groups, and Afro-descendant people representing a rich cultural diversity throughout the country who together represent approximately 9% of the national population (INE 2013).

[3] Poverty seems to be higher in these areas because of the share of households headed by individuals with low levels of schooling, as well lower female participation in the labor market.

Figure 3. Water Basin selected in each country.



5. Compounding the situation, and throughout the target area, the increase in population, the high rates of poverty and poor access to services in the target area increase vulnerability of the affected population. Indeed, the local population in the project area has been characterized as having a low to very low human development index, reflecting in high rates of poverty and relatively low access to services. Details on this characterization are found in section II.
6. In addition, the region, due its relative remoteness has not received the required resources to ensure a land planning system responsive to the weather challenges it faces and lacks a local warning system that effectively triggers responses to flee lower ground and avoid landslide danger zones. Relatively low levels of education and capacity increase the vulnerability of local populations as well.
7. Socioeconomic description of the target area in each country.
    - **Belize: Socio-economic assessment.** The Monkey River is one of the most important in Belize. The district's population is about 31,000 (2010 estimate) and is 95% Maya, mostly Maya Ya'axche. The balance is mostly made of Garifuna and Creole, located mainly on the coastal zone. There are 39 Maya villages in the district, and an estimated 7 villages directly on the watershed. The Maya are mostly engaged in agriculture, the main crop is corn. While the Maya population is cash-poor they do not see themselves as living in poverty. Erosion in the water shed is seen as a major problem, affecting agricultural productivity and contributing to siltation of the river. Erosion has been exacerbated by the loss of riparian forest and watershed forest cover over time. The riparian forest is protected land. The Maya are very protective of their culture. Any activity in the area has to be developed after the community is approached. The Ya'axche places a premium on free consent and strong networking with community members. There are strong community organizations working in the area, capable of supporting advanced environmental restoration work.
    - The Monkey River town is located at the mouth of the river. The village is one of the last purely Creole settlements in Belize, and many traditional practices are still carried out. The main occupations are fishing and ecotourism.
    - **Belize: Site-specific gender assessment**. The social make-up of the Delta places a premium on the role of women, with practical, substantial participation of women in leadership positions. Women play an important ancestral role. The current community leader is a woman. For example, the president of the district is currently a woman. Key local organizations (like Y'aksche and TIDE) include women in their management positions, with some being led by women. Women are very active in general community activities. The project activities will involve communities with substantial women in leadership positions and will be designed taking into account the role and special vulnerability of women in the target area.
    - The Monkey River is one of the most important in Belize. It is located in the Toledo district in the south of the country, neighboring Guatemala. The district's population is about 31,000 (2010 estimate) and is 95% ***Q'eqchi*** and Mopán Maya. The balance is mostly made of Garifuna and Creole, located mainly in the coastal zone. There are 39 Maya villages in the district, and 11 villages directly in the watershed,

including at least two Maya Villages. The Maya are mostly engaged in subsistence agriculture; the main crop is corn. The Maya are very protective of their culture, and any activity in the area has to be developed after the community is approached. Women play an important ancestral role, and several of the villages in the watershed are led by women. The Maya place a premium on free consent and strong networking with community members.

- Women are coming up and being more political in male dominated positions. There has been a rise in the number of women majors. It was mentioned during the consultation that women mayors or community leaders do well for the community because they are more "consistent." They do not work all over the village and for that reason they are able to organize better. They are able to lead with common sense, pragmatism and practicality. Women also have gained rights to land where they have the rights to farm and build a home. More women are becoming independent.
- In the Maya villages, the women wear traditional Maya clothing while the men wear more western style clothing. This is noticeably changing with the younger generation. In villages in the Toledo district, men would rise early to farm and help other men in the village with tasks, such as building homes. While the men were out working, the women participated in shared activities such as farming while also cooking, cleaning, and caring for the children if they were not in school.
- Key local organizations (like the Southern Environmental Alliance, Y'axche Conservation Trust, and Toledo Institute for Development and Environment) are led by women, and women are very active in general community activities. The project activities will involve communities with substantial women in leadership positions and will be designed taking into account the role and special vulnerability of women in the target area.
- The Maya women are also in charge of making goods and selling them for profit. They make jewelry, bags, baskets, wood carvings, and coffee. These goods would be brought to larger cities such as Punta Gorda to be sold to tourists. In a cash poor society, women use the money they made to send their children to school. The mothers care greatly for their children's future and want to provide more than what they had previously been provided when they were growing up. On account of a long history[4] of cultural preferences and practices, women in the Delta are in a relatively strong position.
- **Belize: Land degradation.** The river Delta and Watershed have suffered a loss of 9,900 ha since 2001. While the riparian areas are under protection, there was a historical illegal logging of valuable species. This illegal uptake has ceased as most valuable commercial specimens have been cut. The map below indicates the

[4] Ancient Maya women had an important role in society: beyond propagating the culture through bearing and raising children, Maya women participated in economic, governmental and farming activities. The lives of women in ancient Mesoamerica are not well documented: "of the three elite founding area tombs discovered to date within the Copan Acropolis, two contain the remains of women, and yet there is not a single reference to a woman in either known contemporary texts or later retrospective accounts of Early Classic events and personages at Copan (E. Beel, 2002)

areas lost to degradation. The areas pre-identified for the restoration work in consultation with local authorities and the community are also shown in the map below and were selected on the basis of contribution to the maintenance of barrier to sea level surge and maintenance of run offs into the delta.

- **Guatemala: *socio-economic context***[5]. The Cerro San Gil conservation area, the Rio Dulce National Park are located in the north Atlantic area of Guatemala, neighboring the Toledo district in Belize. The Park and conservation areas are uninhabited, with no permanent settlements but have been degraded in the past due to illegal logging. However, Livingston and Puerto Barrios/Santo Tomas de Castilla are important settlements in the area of influence of their eastern slopes and on the coast. Livingston has a population of 18,000 (2018 census) and is located at the mouth of the Rio Dulce at the Gulf of Honduras. The main occupations are artisanal fishing, tourism and agriculture. There are also African Palm plantations in the area. The town serves as the municipal seat of the municipality of the same name. Its population is a mix of Garifuna, Afro Caribbean, Maya Q'eqchi and Ladino people and culture. Puerto Barrios/Santo Tomas de Castilla is also a coastal town and the largest settlement in the area. he 2018 census the population was 100,593. Puerto Barrios and Santo Tomas de Castilla are located 297 kilometers (185 mi) northeast of Guatemala City. The city's population is a mix of mostly Afro-Guatemalans, Maya Q'iqche, Afro-Caribbean, and other groups. As with Livingston the population is engaged in fishing, tourism and agriculture and services. Both towns have been affected by landslides and floods as a result of extreme weather events. There are a number of community organizations active in the area. A key concern is erosion and the degradation of neighboring forested areas and the impact these have on agricultural land on fishing grounds. Most of the fresh water for the town comes from the reserve and park.
- **Guatemala: Site-specific gender assessment**: Guatemala is home to the largest number of indigenous people in Central America. Approximately 38.5% of the nation's population is Mayan. Most of the Maya live in the rural areas of the Central, North, Northwest, and Northeast regions of Guatemala and many speak little to no Spanish but rather one of the many Mayan languages.
- An indigenous woman in Guatemala is more likely than all her fellow citizens to be sick, illiterate, poor and overwhelmed by too many unplanned children. They have limited access to health care and education and generally have worse reported health outcomes compared to Guatemala's non-indigenous population. Indigenous Maya women were the targets of gross human rights violations committed during the long-armed conflict (1960^1996).
- Some eight million indigenous people live in Guatemala, most descendants of the Mayan civilization that once dominated Central America. The current Maya beliefs and practices come from the Mayan worldview (ceremonies and rituals) with

[5] Additional details can be consulted in the Community Consultation Report for Guatemala, in Annex C.

Mayan women with an ancestral role of participation. They are now seeking to act on their own behalf, that is, as protagonists of their own lives. Still, reaching out to indigenous women in Guatemala (Maya or Afro-Caribbean) will require special outreach effort.

- **Guatemala: Land degradation**. The wider areas in the Cerro San Gil conservation area, the Rio Dulce National Park and nearby coastal areas have suffered a loss of cover nearing 8700 ha since 2001. Project resources will be used to structure a pilot restoration with a target 1800 ha equivalent which have been partially degraded within the conservation area and the National Park (about 20% of the area degraded).
- **Honduras Socio-economic context**[6]. The Cusuco National Park and the buffer area provided by the Merendon Forest Reserve sit on the north-eastern part of the country, neighboring the Gulf of Honduras shared with Guatemala. The National Park and the reserve are public land, but it has a strong ecological influence on the neighboring coastal area including the coastal towns of Omoa and Puerto Cortez. Elevations in the reserve zone range up to 2242m (7400 ft.), with a core zone above 1,800m. Fresh water for agriculture and human consumption all originates in the reserve. The hills and slopes of the reserve as well as the relative location of neighboring agricultural communities and the coastal urban area have already raised concerns in terms of long-term sustainability and vulnerability of supply of freshwater. There are also concerns related to process of erosion and the consequent fragility of the area to extreme rainfall events.
- The Garifunas which represent 20% of the population live in coastal communities all across the Atlantic coast mainly in the Department of Atlántida, Colon and Puerto Cortes whereas as the Pech, Tawanka and Miskitos people are mainly concentrated in coastal and inland areas of the Department of Colón and Gracias a Dios. The Garifunas although they are not strictly indigenous peoples, the laws of the country generally consider them together due to their common differences from mainstream society. All three ethnic groups have a close relationship with natural resources and forests for enhancing their local and traditional livelihoods therefore enabling and improving conditions for maintaining biodiversity and ensuring sustainable rural livelihoods is critical for their long-term survival and well-being.

Honduras: Gender Assessment.

- The Honduran population, multiethnic and majority female (51.7%), cohabits in a country that has been ranked as one of the most unequal countries in Latin America in terms of development (Gender Inequality Index of 0.479 versus HDI 0.611), and with a gender gap of 27.8%, according to the World Economic Forum. This condition of inequality particularly affects women and girls, but also the population living in poverty, and the population exposed to any condition of vulnerability, whether physical, psychological, social, environmental, economic, or structural.

[6] Additional details can be consulted in the Community Consultation Report for Honduras, in Annex C.

- Women in Honduras have a very small share of the overall wealth, and even the parts that they have seem to reinforce their roles as homemakers and caretakers. Honduras has extremely unequal income distribution, and high underemployment. Over half of the country lives on less than two dollars a day, and the majority are women. Poverty mainly is a cycle perpetuated by lack of opportunity and education.
- Honduras, especially in the rural areas, generally has a patriarchy system, and gender roles many times put women in a subordinate position. Such gender roles dictate that men dominate the public sphere, while women are supposed to conform and adhere to the realm of the domestic sphere. This means that women are doing all the housework and raising the children, therefore their work and personal life are intertwined. Specific efforts are needed to ensure that women and young girls are involved in conservation and restoration initiatives, which is more probable given that more young women are attracted to agricultural programs within high schools and community colleges than in earlier years.
- As a result, this population lives in conditions of poverty and inequality that directly influence the deepening of aspects related to the feminization of poverty; limitations in access to basic services, resources, economic opportunities, and decent employment (livelihoods); vulnerability to violence, especially Gender Based Violence (GBV); and the continuity of the gender gap that exists in terms of participation at the organizational or political level.
- This situation has been aggravated by the circumstances by the devastation caused by hurricanes Eta and Iota that affected more than 4 million people, and which have uncovered the conditions of violence and vulnerability to which women and girls in Honduras are exposed.
- In the division of unpaid domestic work, the time spent on unpaid domestic chores and care work has increased for women (+4 hours). Also, women have seen a reduction in their already weakened control over asset or patrimonial resources.

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- **Honduras: Land degradation**. The areas in the Cusuco National Park and the Merendón Municipal Reserve and nearby mangrove areas in Honduras have suffered a loss of cover nearing 24,000 ha since 2001. Project resources will be used to structure and implement a pilot restoration with a target 1800 ha equivalent which have been partially degraded within the Cusuco National Park and downstream in neighboring buffer areas in the Merendón reserve (where about 10% of the area has been degraded).

Climate change vulnerability and impacts

8. **Central America is one of the most vulnerable regions to the consequences of climate change.** Its economy is susceptible to impacts on agriculture caused by rising temperatures and greater instability in rainfall patterns (Bouroncle et al. 2017). Coastal areas are exposed to sea level rise, flooding, and saline intrusion; and its population is subject to increased incidence of tropical disease vectors (Vergara et. al. 2013; Graham et. al., 2016). The anticipated impacts will have consequences on livelihoods, threaten food security, hydropower supply, and drive migration. For these and other reasons, the

region has been characterized as a climate vulnerability hot spot (Lintner et. al., 2012, Imbach et al. 2017 CEPAL, 2018).

9. **Furthermore, the fragile and unsheltered Atlantic area of Central America, from northern Honduras into Guatemala and Belize(around Ametique Bay) has suffered the brunt of impacts from weather extremes.** This region is known as the "hurricane corridor" of Central America as it has been the landing area for a large number of hurricanes in the region. During the last 60 years, some 65 hurricanes/tropical storms and many more tropical depressions have affected this area with the number of landfalls increasing over time. Figure 1 shows the decadal variation in the number of landing storms in the project area.
10. This area has been identified as the area of confluence for landfall of extreme weather events in Central America. The area represents a historically vulnerable region, close in proximity and with similar bio-physical characteristics while distant in culture and distance from other regions in their own countries. This is a strong rationale for addressing the issue across borders in the area
11. National Communications in the three countries identified hurricanes as the main climate change impact for the coastal area comprising the corridor of Atlantic Forest.
12. Global warming has caused an unprecedented rapid increase in sea surface temperatures in the western Caribbean. This has added fuel (through higher rates of energy transfer between the sea surface and the lower layers of the troposphere) for tropical storm and hurricanes leading to detected increases in frequency and intensity.
13. **Most Global Circulation Models predict a further intensification in the occurrence and intensity of these weather events (Walsh K., et al. 2016).** While the situation is already dire in an area with a propensity for landing of tropical storms and hurricanes, climate change is anticipated to result in an intensification in the number and strength of these events in the area. A historical review, over the last four decades, of hurricane occurrence in the Atlantic confirms intensification in frequency and strength (Kossin T., et al. 2020). An analysis of hurricanes landfall in the Caribbean (in Vergara, W. ed., 2009) also anticipates a significant increase in wind velocity and frequency of landing storms in the Central American coast.
14. **The latter includes an estimate of the increase in number of extreme weather events and their intensification in the Atlantic Coast of Central America.** The report estimates that the number of landfalls in the Atlantic Coast, including the Yucatan Peninsula would increase from 1.2 per year during the period 1995-2006 to up to 1.5 per year for the period 2020-2025. Likewise, the report projects an increase in the average damage of 18% for the period 2020-2025 compared to the period 1995-2006.
15. Also, and according to the IPCC (2018):

    i. Tropical cyclone rainfall rates will likely increase in the future due to anthropogenic warming and accompanying increase in atmospheric moisture content. Modeling studies on average project an increase on the order of 10-15% for rainfall rates averaged within about 100 km of the storm for a 2 ° Celsius global warming scenario.

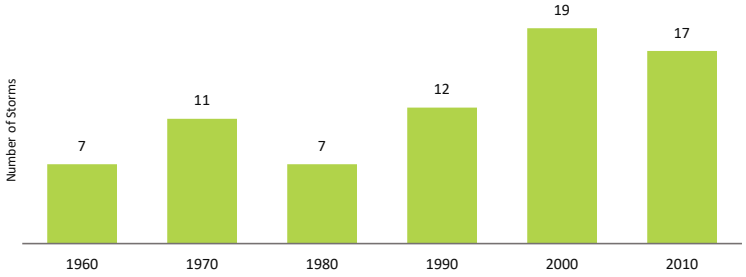
    ii. Tropical cyclone intensities globally will likely increase on average (by 1 to 10% under projections for a 2ºC global warming). This change would imply an even larger

percentage increase in the destructive potential per storm, assuming no reduction in storm size.

iii. The global proportion of tropical cyclones that reach very intense (Category 4 and 5) levels will likely increase due to anthropogenic warming over the 21st century.

16. **These projected climate extremes will increasingly affect people's livelihoods, economic activity, and force migration and resettlement processes**. The intensification of extreme weather events on the Atlantic Coast of Central America, caused by the consequences of global warming, is likely to impose an unsustainable burden on the fragile economies of the region and contribute to loss of human and financial capital, including livelihoods and assets of women. The economic impact of extreme weather events is reflected on crop losses, damages to settlements, impacts caused by displacement of populations and ultimate number of fatalities.

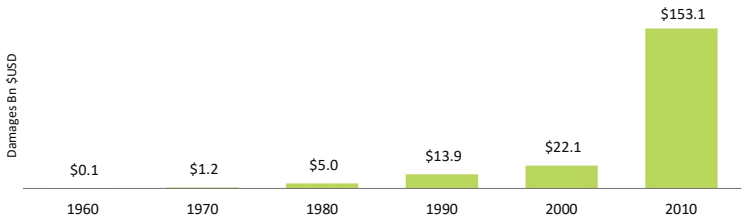
Figure 4. | Number of hurricanes/tropical storms landing in the project area by decade



Source: from data extracted from https://coast.noaa.gov/hurricanes/

17. **The financial losses caused by these storms is also increasing and since 1960 have resulted in an estimated accumulated economic impact of about US$ 200 billion** (NOAA data base; see figure 5).

Figure 5. | Economic damage (in US$ Billions) caused by hurricanes/tropical storms in the Atlantic Region of Belize, Guatemala and Honduras



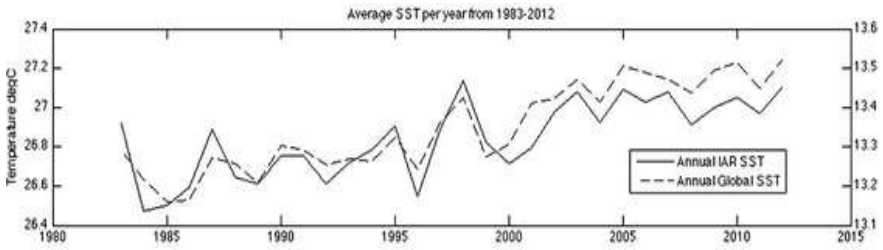
Source: Data extracted from https://coast.noaa.gov/hurricanes/

18. **The high vulnerability due to the elevated levels of exposure is exacerbated by very low adaptation capacities and limited resilience elements** from an economic perspective, including the low human development index (HDI)[7] in the participating nations, high rates of poverty and low opportunities for innovations and decent jobs.
19. Specifically, in the tree countries USAID developed a comprehensive vulnerability evaluation. in that report "Vulnerability was estimated at the municipality level considering impact (exposure and sensitivity) in relation to the adaptive capacity of human communities." (USAID 2015)[8]. In the studies carried out by CATIE and TNC, the municipalities of Toledo (Belize), Puerto Barrios and Livingstone (Guatemala) and Tela (Honduras) classified among the municipalities with higher vulnerability index and close to 100% of the areas of this municipalities present medium, high or very high vulnerabilities to climate change integrated evaluation.
20. Protected Areas has also been studied in these vulnerability analyses to climate change and measure the level of sensitivity of the protected areas in the tree countries and analyzing the vulnerability to climate change. The results shows that Punta Sal (Jeanette Kawas (Honduras), Monkey Delta (Belize) present high vulnerability index in more than 90% on their territories, while Cerro San Gil presents a high vulnerability on inhabitants in the 74 % of their territories.
21. Of the 182 countries in the Climate Risk Index, Belize was in the top 5 percent for losses to climate-related natural disasters during 1997–2016 (Figure 1) and in the top 12 percent of climate-related disaster fatalities.
22. **Globally, sea surface temperatures (SST) have been rising in direct response to global warming.** Analysis of historical records has concluded that the Caribbean basin SST have increased over time, with most of the net changes being experienced since the 1990s (Blankespoor, et al., 2016; Strelich, 2015) see figure 6.

[7] The **Human Development Index** (**HDI**) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education attainment and their standard of living.

[8] Vulnerability Analysis to Climate Change in the Caribbean Belize, Guatemala and Honduras. Corrales L, Imbach P, Secaira, F, Cabral, H et Al. CATIE & TNC under the USAID Regional Program for Aquatic resources Management and economic alternatives and adaptation to climate change. (2012-2015)

Figure 6. | Variation of SST in the Caribbean basin (1985-2012)



Source: Browder et al., 2019

23. **The rise in SSTs is correlated with increases in the amoun**t of energy available for the **formation and strengthening of extreme weather events** (Knutson, T., 2016). For example, an assessment of hurricanes in the Caribbean concluded that the observed surge in land-falling hurricanes indicates a broader increase in average tropical cyclone wind speeds as sea-surface temperature rises, and a shift toward a greater number of Category 4 and 5 hurricanes taking place (Curry et al. 2009).

24. Besides higher wind speeds, **an increase in the energy of hurricanes and tropical storms is linked to heavier rainfall, massive river flooding and landslides** which destroy crops, affect infrastructure, limit the potential growth of coastal tourism and cause economic damage in coastal communities. For example, a report on the financial consequences of global warming (Vergara W. et al., 2013) concluded that the anticipated costs of weather extremes were amongst the most onerous of all climate impacts in the region.

25. A case in point, hurricane Fifi (1974) dropped torrential rainfall, over the Atlantic Coast of Honduras and in general over mountainous areas. The rains caused widespread flooding and landslides, although impact from winds was not as severe. Loss of life and damage occurred in Honduras and Guatemala over the Gulf of Honduras heavily affecting the Rio Dulce area and the towns of Puerto Barrios and Livingston in Guatemala and Puerto Cortes in Honduras. Fifi brought continuous rainfall to the area for three days Most of the damage was ruined crops. The Atlantic region received torrential rain that resulted in severe landslides and flooding.

26. Also, in Honduras, hurricane Felix (2007) caused at least 133 deaths and hundreds of millions of dollars in damages. Felix made a second landfall in the Mosquito Coast of Honduras and Nicaragua as a Category 5 hurricane with 160 mph (260 km/h) winds. According to official information, at least 40,000 people were affected, and 9,000 houses destroyed. Inland flooding was also reported in Honduras, particularly near Tegucigalpa and in the northwestern regions where the Ulua and the Chamelecon Rivers overflowed into an agricultural area. Coastal flooding also damaged the town of Izabal in Guatemala where 850 people were evacuated. Crop damage in Honduras amounted to US$ 4.49 million 2020.

27. In Guatemala, Hurricane Stan made landfall on its Atlantic coast in 2005. Because of Stan's position within a large area of convective activity and thunderstorms, the hurricane's effects were far-reaching and widespread across Central America. Flash floods generated by the hurricane caused severe crop losses, particularly to coffee crops and subsistence agriculture. Overall, Stan caused at least 1,668 deaths across six countries, with many others unaccounted for. Most of these fatalities occurred in Guatemala and were mostly caused by mudslides triggered by torrential rainfall, many of those in the Atlantic coastal communities.

28. In Belize, Hurricane Earl in 2016 made landfall on the southern coast as a Category 1, The hurricane caused extensive damage; losses to agriculture exceeded US$100 million. Also, in Belize, Hurricane Keith landed on its coast in 2000, causing extensive damage. The storm brought torrential rainfall to Belize, with many areas reporting at least 10 inches (250 mm) of rain, while highest reported amount of precipitation was greater than 30 inches (760 mm) causing extensive flooding. In Belize, Monkey River town reported that only 12 houses remained, while elsewhere in the country, at least 60 homes were destroyed or damaged; At least 19 people were killed in Belize and damages totaled to US$280 million.

29. Hurricane Iris (2001) caused widespread destruction in Belize. Iris made landfall as a Category 4 in southern Belize near Monkey River Town on October 9. The hurricane caused severe damage—destroying homes, flooding streets, and leveling trees—in coastal towns south of Belize City. Destruction totaled US$250 million. Because Iris was compact, the damage was largely confined to 72% of the houses in the Toledo district. The hurricane damaged or destroyed 3,718 homes nationwide and wrecked more than 95% of the homes in 35 villages in the poorest parts of the country. Iris left about 15,000 people homeless. High winds also damaged large swaths of forest and crops; Iris killed 24 people in Belize. The storm also killed eight people and damaged about 2,500 homes in neighboring Guatemala.

30. More recently, Hurricane Nana (2020) made landfall on the southern coast of Belize as a Category 1. While no comprehensive damage assessment is yet available the hurricane resulted in torrential rains in the target area (Belize, Izabal area in Guatemala and coastal Honduras). The hurricane caused extensive crop losses due to flooding and forced landslides.

Table 1. Examples of extreme weather events landfalling on the Atlantic Coastal area: impacts, consequences, and damage

Event	Impact	Consequences on the target area	Total damage[9]
Hurricane Fifi (1974) **Honduras and Guatemala**	Torrential rains Flooding Landslides on coastal areas Continuous rainfall to the area for three days	Loss of life and damage occurred in Honduras and Guatemala over the Gulf of Honduras heavily **affecting the Rio Dulce area, including Puerto Barrios and Livingston in Guatemala and inflicting serious damage on Puerto Cortes in Honduras.**	US$1.8 billion (1974) in damages.

[9] However, systematic data on hurricane post assessment is lacking for the area in the literature

Hurricane Felix (2007) **Honduras**	Torrential rains Northwest rivers overflowed Landslides	Coastal towns damaged. 40,000 inhabitants affected; 9,000 homes destroyed. Coastal area was seriously affected including **Puerto Cortes.**	US$4.5 million. Second landfall resulted in most damage on the Atlantic Coast.
Hurricane Gert (1993) **Belize, Honduras and Guatemala**	Extensive flooding and mudslides throughout Belize, Guatemala and Honduras[10]. Floods and mudslides that isolated numerous communities	Gert claimed the lives of 116 people. The disaster left swaths of private property, and farmland in ruins,	US$170 million at least in the wider impacted area (1993 US$).
Hurricane Earl (2016) **Belize**	Torrential rains Landslides Rivers overflowed	Crop losses in the southern coastal area including the **Toledo district.**	US$100 million
Hurricane Keith (2000) **Belize**	Torrential rain Extensive flooding	Coastal villages destroyed	US$280 million
Hurricane Iris (2001) **Belize and Guatemala**	Torrential rain Landslides Coastal erosion	**72% of the houses in the Toledo district in Belize were destroyed. The storm heavily affected the Monkey River delta and Monkey River town**. 15,000 people left homeless, large swaths of forest and crops destroyed in northwest Guatemala and Belize. 24 people killed in Belize,	US$250 million (2001 US$)
Hurricane Nana (2020) **Belize, Guatemala and Honduras**	Torrential rain Flooding and landslides	Crop losses reported in Belize Coastal villages evacuated	No comprehensive estimate yet available.

Source: NOAA database, consulted, September 2020

31. **High resolution vulnerability analysis.** On the basis of the historical and growing exposure to extreme weather events, around the Amatique Bay, a high-resolution vulnerability analysis was conducted using existing data bases at WRI as well as data collected from NASA's databases as reported by Emberson et al. 2020, Stanley and Kirschbaum 2017. The analysis included an assessment of landslide susceptibility as well as exposure to coastal and riverine flooding.
32. **Landslide susceptibility** is determined by terrain slope, lithology, forest cover change, distance to fault zones, and distance to road networks and trained against historical instances of landslides globally to estimate a static susceptibility. NASA has used a machine learning algorithm to combine these five input layers. Moderate landslide

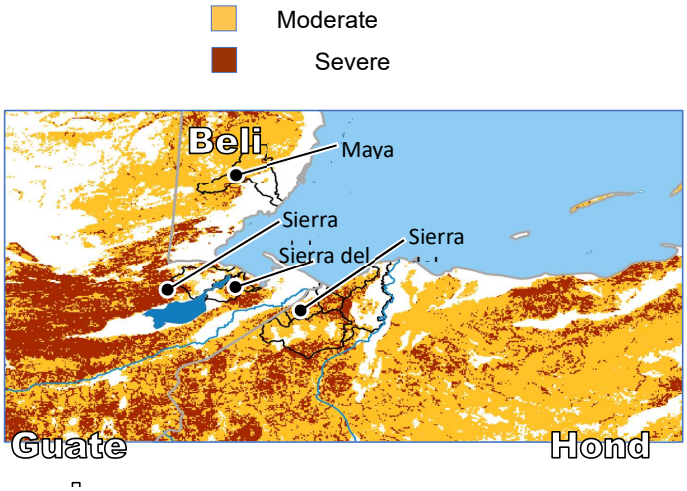
[10] Mexico and Costa Rica were also affected.

susceptibility is binned to occur in about twice as many grid cells as severe susceptibility globally and could manifest as any combination of input layers leading toward a weaker landslide potential (e.g., flatter slope, further from fault lines).

33. The analysis concludes that the target area is moderately or severely **susceptible to landslides**, due to a combination of **steepness**, **deforestation**, and **fragile geology** and therefore vulnerable to the impacts of extreme rainfall associated with extreme weather events**.** Most vulnerable areas near the proposed project include: The **Maya Mountains** in Belize, including the upper Monkey River watershed; the **Sierra del Santa Cruz** and **Sierra del Mico** in eastern Guatemala, which border the Rio Dulce Basin; and the **Sierra del Merendón** of Honduras, including the Cuyamel and Chamelecon Media sub-basins. Loss of vegetation cover in the area would compound the effects exacerbating run offs and soil erosion.

34. Landslides may also have **devastating effects on small mountain towns**, such as Queja, Guatemala, where hurricane Eta caused landslides that killed 50 people and destroyed 150 houses in 2015. In addition, landslides can **damage roads**, which can disrupt travel and delay rescue efforts during storms. Failing debris dams generated by landslides can cause **floods** that would naturally occur **once in every 10,000 years.** A graphic representation of susceptibility to landslides is shown in the figure below, measured in relative exposure:

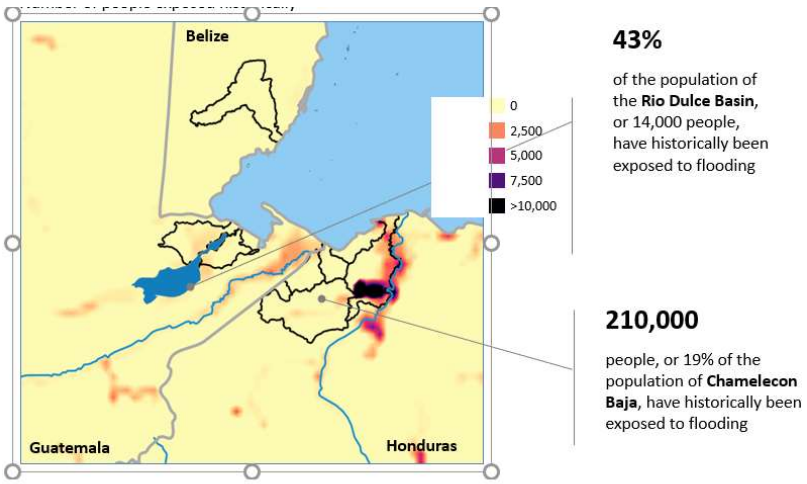
Figure 7. **Susceptibility to Landslides**



35. **Exposure to coastal and riverine flooding** was estimated using historical data from a period centered around 2010, as provided by the WRI dataset (World Resources Institute), NASA Socioeconomic Data and Applications Center (SEDAC), and National Center for Atmospheric Research (population projections). Flooding exposure is counted if the 1 km grid cell has at least a 1% annual probability of a flood of 1 cm depth or greater. Historical flooding in targeted restoration sites in Honduras impacts 222,000 people, compared to 14,000 in Guatemala, and a smaller number in Belize.

36. The exposure is also exacerbated by loss of vegetation cover which will contribute to higher-than-normal runoffs over short periods of time associated with extreme rainfall induced by extreme weather events.

Figure 8. **Exposure to coastal and riverine flooding**



37. Under both measurements, the target area shows significant vulnerabilities to the impacts of the currently experienced, as well as the growing anticipation of extreme weather events.
38. In the target area, degradation of coastal, riparian vegetation and associated watersheds, including slopes toward or on areas in the Atlantic Coast can exacerbate the impacts of CC related to landslides during extreme rainfall, flooding in lowland areas. The degradation of mangroves and other coastal vegetation diminishes the buffer protection of the coasts to storm surges. Restoring land in these areas would strengthen the natural capacity to face the intensification and increased frequency of extreme weather events anticipated as a consequence of climate change. It would also maintain ecosystem services required to sustain livelihoods and support forest integrity.
39. Monkey River Delta is challenged by reduction of ecosystem resilience to climate challenges, including extreme weather events. At this time more than 30% of the lots in the village, including many houses and several sandy streets, have been eroded away and inundated by the sea. Old house posts still protrude above the water marking where the village once reached. Currently the village cemetery is now being eroded and washing remains of ancestors into the sea. The village is blocked on the other side by a wetland and lagoon, preventing expansion in that direction[11].

[11] Sediment is deposited further upstream, resulting in shallow riverbeds that promote higher flood waters that reach further up the landscape and cause more damage. Young and Cayetano (2007) conducted a study of the Coastal situation in the Monkey River coastal zone and made recommendations. Some beach stabilization strategies have been installed to arrest erosion, but the cause of the problem has yet to be fully addressed

40. Data in table 2 emphasize the high vulnerability to extreme weather events of the coast of the Gulf of Honduras, the Atlantic coastal region that runs from Dangriga in Belize, through Guatemala to La Ceiba in Honduras. Most fatalities and losses in infrastructure were caused by rainfall and induced flooding and landslides rather than as a result of winds [12]. However, loss of forest canopy and its subsequent impact on forest degradation has been affected by winds for several years. Most affected were coastal dwellings, especially in low-income communities. Flooding has also caused crop losses. The losses in production can also be traced back to a combination of flooding and landslides. As women have a prominent role in agriculture and household activities they are also significantly impacted.[13]

Table 2. Vulnerability of the target areas to the consequences of extreme weather events.

Vulnerability	Monkey River Delta and associated riparian areas in Belize	Cerro San Gil and Rio Dulce National Park in Guatemala	Cusuco National Park in Honduras
Physical Exposure	High. The delta is at the level of the ocean and has been affected in the past by several hurricanes and tropical storms. There has been an acceleration of erosion caused by deforestation of riparian buffer areas. Mangroves at the mouth of the river have been affected by erosion and human occupation.	High. The reserve slopes toward the north and east reaching coastal areas. The Rio Las Escobas, in the reserve is the source of fresh water for coastal communities, including Puerto Barrios. Hurricane Stan caused river overflows, landslides and flooding of the lower watershed with impacts on coastal settlements.	High. The parks slope toward the coastal area and has suffered substantial erosion over time caused by the loss of canopy. Torrential rains, for example those caused by Hurricane Felix have contributed to substantial impacts on housing and coastal infrastructure.
Reactive capacity	The community consultation concludes there is a high level of organization in the area. Several ONGs and local communities are advocating for conservation and restoration measures to protect the area and maintain access to services provided by the Delta (fishing, maintenance of riparian	The consultation revealed a high level of awareness by the local community of problems associated to extreme rainfall events in the area, including landslides and flooding. Community is aware of the causes of erosion. However, there are no active programs designed to counteract the effects. There is increasing concern of the impact of	The community consultation likewise documented awareness of the delicate link between the health of the reserve and the coastal mangroves as protection measures to abate impacts of severe weather extremes.

[12] Technical literature on the damage function of hurricanes and storms indicate torrential rains are more critical than strong winds and the net effects are more lasting.

[13] The Gulf of Honduras receives the runoff from the watersheds of twelve rivers including the Moho, Sarstún, Río Dulce, Motagua, and Ulúa. Increased volumes of sediments drained into the Gulf, especially under intensifying climate extremes, pose a threat to its globally important marine ecosystem.

	areas, prevention of flooding)	erosion in the reserve on tourism in the area.	
Socio-economic profile	The Delta is home to Creole artisanal fishing communities as well as to small landholders. Access to services is limited and income level is low.	The coastal area north and east of the reserve includes the towns of Puerto Barrios, Livingston, and other smaller towns. There is also an area of subsistence agriculture between the reserve and the coastal area. There is artisanal fishing in the coastal area. The population is a mix of mostly Afro-Guatemalans, Q'uiche Maya and afro Caribbean. Most of the population depends of subsistence activities.	The community consultation revealed an active engagement, specially from leaders of farming groups and other inhabitants
Protection	Priorities for protection/ restoration are the riparian areas and coastal mangroves.	The community consultation revealed that priority activities include land planning, enforcement of regulations to prevent further erosion and a reforestation program on the eastern slopes of the reserve.	Priorities for protection are based on restoring the mangrove barrier on the coast and increasing the capacity of the slopes to retain extreme rainfall.
Expected beneficiaries (target population)	The population in the lower watershed of the Monkey River (Delta) is estimated at 1400. About 80% of the residents are of Maya descent, with the rest being mostly Garifuna. A few families of mestizo descent are also in the area. Therefore, over 99% of the population that would benefit are members of indigenous minorities. The project activities will benefit the entire population in the Delta in an equitable manner.	An estimated 43% of the population of the Rio Dulce basin are highly exposed to flooding and landslides (about 43% of the total population, see paras 35-40, or 14,000 people). Population surveys in the entire basin indicate that Maya Q'eqchi and Garifuna population account for a majority of the population. The project activities are designed to benefit the entire population in an equitable manner.	An estimated 10% of the population of the lower drainage basin from the Cusuco and Merendon areas have been historically affected by landslides and flooding. The proposed project activities are expected to directly benefit about 10% of the affected population of 21,000. Most of the population is mestizo with a majority of Garifuna on the coastal area. The project activities are designed to benefit the entire population in an equitable manner.
Expected beneficiaries (target population)			

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The Problem to be solved

41. **The loss of vegetation in this region has contributed to high rates of soil erosion in affected areas that make the area prone to landslides and flooding during periods of heavy rainfall and that have caused soil erosion and siltation of rivers and in the Mangroves of those watersheds impacting their main economic activities associated to commerce, agriculture, fishing, and tourism.** Overflowing of rivers that have lost riparian forests and buffer areas and soil erosion are some of the principal causes of losses in agricultural areas during extreme weather events in the area. Likewise, the disappearance of coastal vegetation like mangroves and coastal grasses caused an exacerbation of coastal flooding which in the case of Hurricanes Felix and Stan was one of the main cause of losses in human lives.

42. In addition**, the long-lasting impacts on erosion magnified during extreme rainfall events; the effects of canopy loss due to extreme winds and the rapid changes in soil moisture and temperature have contributed to a discernible loss in forest density**[14]. **In turn, rivers carry the eroded soils downstream, causing significant problems.** Siltation also raises riverbeds, increasing the severity of floods, and the likelihood of overflows and creates sandbars that make river navigation far more troublesome. The increased sediment load of rivers affects the ichthyology of rivers and nearby marine systems.

43. **Smallholder farmers, coastal settlements, indigenous minorities and women are most vulnerable to these extremes and the impacts of losing not only their crops and dwellings but also the ecosystem services of forest and coastal biomes, key elements of their economies**.

44. While the situation is slightly different throughout the Atlantic Coast of Belize, Guatemala and Honduras, key drivers for loss and degradation of forest cover outside protected areas in the region include the clearing of forest for annual crops, cattle ranching and firewood extraction. Forest cover in protected areas has been degraded in the past by these human activities, while these areas are no longer the target of illegal logging (as most valuable species have been nearly eliminated) it is now impacted by extreme weather events, so that restoration on these public lands is vitally important[15].

45. There is also growing evidence that as the temperature in the lower troposphere increases, there is a corelated increase in the temperature of the top layer of soil as well as a reduction in its relative humidity. The drying of forest biomes has been established as a mechanism that could result in a net reduction of biomass density (Coe., et. al., 2009; Allen. 2008). Furthermore, the intensification has been projected to further increase in the future, including in the specific overall project area. A local climate projection confirms the

[14] Rapid increases in soil temperature and reductions in relative moisture of the top layer of soil have been linked to a reduction in the biomass density of forest landscapes in the neotropics (Vergara, W. et. al, 2011; Allen. C., 2009). Studies in the Amazon Forest have confirmed a process of desertification in the eastern part of the biome (Cox. P., 2019). The IPCC has warned about the impact of climate on forest cover (IPCC, 2018).

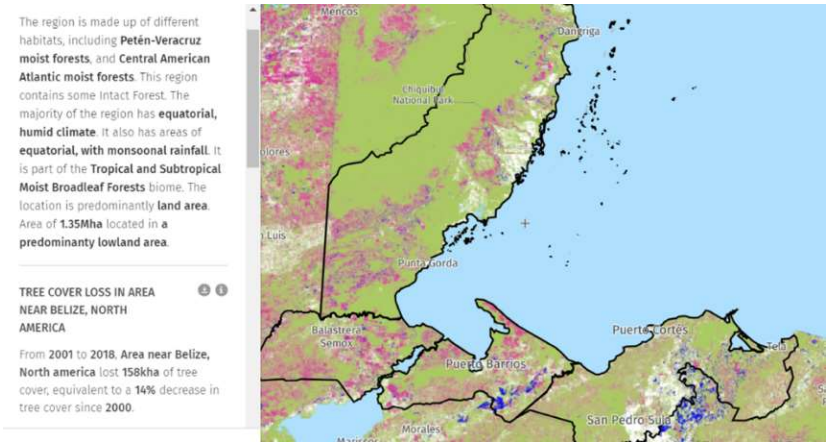
[15] Where pines are present, forest cover is now susceptible to degradation by bark beetle attack

likelihood of intensification in the area. The direct physical consequence will be reflected in more intense and frequent torrential rains, fast winds and coastal surges. As a result, the region expects stronger runoffs, river overflows, flooding and landslides.

46. In the target area, poor land planning has led to deterioration of coastal biomes, including degradation of coastal vegetation. While the rates of deforestation have somewhat diminished, as a result of an improved policy framework and the participation of these nations in Initiative 20x20 (https://initiative20x20.org/), it is estimated that the coastal area lost 158,000 ha of its vegetation cover between 2000 and 2018 (Figure 9).

47. There is a feedback process in that as the consequences of climate change impact forest integrity, the degradation of Atlantic Forest would contribute to a reduction in environmental services and therefore increased vulnerability on coastal populations and livelihoods in the area. Climate variability and change degrade forests, forcing shorter statures, reduction in cover (canopy) and ecosystem service provision (Mc Dowell et al, 2020).

Figure 9. | Loss of forest cover (pink) in the coastal areas of Belize, Guatemala and Honduras on the Gulf of Honduras during the period 2000-2018.



Source: GFW forest cover-change map accessed March 2020

48. A reduction in forest integrity induced by dieback mechanisms would further contribute to a reduction in the services the forest provides, including stability in water run-offs and erosion control which would be increasingly required to face the consequences from the intensification of extreme weather events. Figure 4 below summarizes the feedback loops between forest integrity and climate change in coastal areas prone to landfalls of extreme weather systems.

49. There is likewise substantial evidence indicating that loss of canopy and root structures contribute to loss of integrity in soil cover, erosion, and during periods of heavy rainfall may result in damaging landslides. The loss of trees, which anchor the soil with their roots, causes widespread erosion. After heavy tropical rains fall on degraded or denuded forest lands, the run-off carries soil into local creeks and rivers (Southgate D., et al 1992, Franco A., et al 2019).

50. Finally, there is a need to obtain on the ground information over a specific pilot area, on the use of a nature-based solution (restoration of degraded forest cover), to illustrate the cost and benefits of the approach and generate information that could be used to support deployment at a large scale including with participation of private actors associated to Initiative 20x20.

Solutions

51. For addressing both climate and non-climate related risk the proposal focuses the solutions on Nature-based (Ecosystem Based) Adaptation measures. These use biodiversity and ecosystem services to help communities adapt to the negative impacts of climate change" (UNEP 2016), more specifically we will be focusing in restoring and replanting upland forests, riparian and coastal mangroves to reduce landslide risk and coastal erosion from strong storms, conserving natural infrastructure to build buffer areas to protect the communities and also offering additional benefits in supporting a transition to new economics and green jobs[16].

52. **For optimal solutions to the threat from climate extremes, the coastal areas of the three countries of the Gulf of Honduras need to be treated as a single region.** These areas are contiguous and travel among them is easier than travel to their respective capitals. They share similar social, environmental and agro-ecological characteristics, mestizo, Maya, Garifuna and afro-Caribbean cultures and can be impacted as a whole by the same extreme weather events. By focusing on local solutions, with heavy engagement of the local communities the project takes a swipe at a problem whose solution has eluded previous efforts: the reduction in vulnerability of local populations and ecosystems to a growing problem caused by climate change.

53. There is substantial evidence that forest degradation and in general loss of vegetation cover, is associated with an increase in streamflow totals because of the lower evapotranspiration of the replacement vegetation (Bruijnzeel, et al., 2010). This together with reduced rainfall infiltration, due to soil compaction, can result in higher and more rapid peak flows, which may exacerbate flash flooding, and thus the vulnerability of local communities to catastrophic flooding (Bruijnzeel, 2004; Lopez-Ramirez, et al., 2020) during periods of heavy rain. In contrast, the seasonal hydrologic impacts of this conversion often result in strong declines in dry season flows, as deforested land show much lower rainfall infiltration, mainly due to soil compaction, which leads to insufficient replenishment of groundwater reserves during rainy seasons (Bruijnzeel, 2004; Muñoz-Villers et al., 2015). This increases the vulnerability of local communities to extreme variability in water supply (Sáenz, et al., 2014).

[16] The bulk of works and facilities will be undertaken using labor and leadership from local communities.

54. The restoration and maintenance of healthy coastal ecosystems is amongst the most cost-effective set of measures to mitigate risks of landslides and river overflows, while also supporting the maintenance of services critical to maintain and secure local livelihoods (Correa P. and J. Kintz., 2013; Hale L. et. al., 2009; Constanza R. et al., 2008)[17].

55. Despite a number of measures exist to address the consequences of an intensification of climate impacts on coastal areas, including the construction of catchment areas to prevent fast runoffs after intense rainfalls, engineered, hardened embankments to prevent landslides, hardening riverbanks with rock armor, moving settlements away of 100 or 1000 year flooding events, building coastal barriers and horizontal levees to mitigate rapid storm surges, more sustainable measures need to be implemented for a long term solutions and in costs effective approach.

56. "Overall, the co-benefits of Nature-based (EbA) practices in terms of climate regulation, water purification, habitat creation, biodiversity conservation and landscape amenities are often significantly greater than those of engineering alternatives (e.g., hard defenses infrastructure, hardened slopes, others) (Naumannet al., 2013)".

57. Large scale engineering solutions are expensive and impose stress on riparian and riverine ecosystems, while nature-based solutions such as reforestation can be much cheaper, acts to enhance local ecosystems, and is building economic capacity for future generations in not just wood, but soil and ecosystem services. Sometimes engineered solutions are required to stabilize a site so that reforestation can succeed, but as a rule these strategies should be minimal and actions of last resort. Additional, forests do not require maintenance costs (but may require management) and they contribute to the economy of future generations rather than eventually imposing a cost.

58. Alternatives for the prevention of landslides or reduction of their likelihood during heavy rainfall on steep slopes in the target area include engineered embankments, rock armor or forest restoration. The cost of embankments estimated using engineering data (GeoCat, 2010) is US$100,000 per km and rock armour costs US$200,000 per ha[18]. In contrast, the cost of nature-based solutions such as tree planting with a density of 1000 2-year-old trees per ha or including bamboo for rapid initial stabilization of riparian areas was estimated at only US$2,000 per ha. The cost of displacing settlements is socially and economically prohibitive.

59. **Recent research in Mexico and Central America confirms that restoration of tropical montane forests can result in improved hydraulic regulation, water quality, and biodiversity as those of primary forest** after a period of regeneration (Berry, et al, 2020). Further, even young secondary forests, which are restored by natural processes, exhibit good regulation relative to other land uses. Increased vegetation cover from restored forest

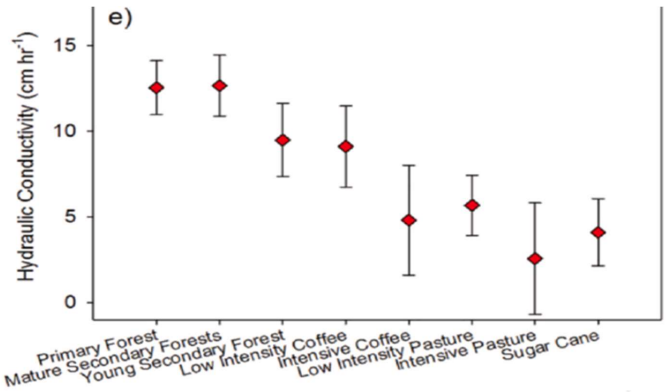
[17] A well-documented experience in the South Pacific (Rao N., et. al., 2013) concluded that Ecosystem-based adaptation options are generally cheaper, but these actions range in effectiveness of damage avoidance as well as the expected time for initiation of provision of damage protection. Likewise, landmark work by Constanza and coworkers concluded that "Coastal wetlands reduce the damaging effects of hurricanes on coastal communities" cost-effectively (Constanza R., et. al. 2008) making a strong case for deployment of restoration of wetlands as a risk reduction measure.

[18] On the basis of 1000 m of lineal extension with a depth of 10 m.

or diversified agroforests thus enhances soil properties that promote infiltration and lead to greater hydrologic regulation and water quality (Figure 10).

60. In the target area, restoration for adaptation as a nature-based solution to climate extremes must have a large-scale watershed focus. This project will begin forest restoration in coastal and upland public protected areas (PAs) which cover a substantial land area and when restored will protect people from both direct and indirect impacts of storms through improvement of surface hydrology regulation and consequent reduction of erosion, landslide, and flooding risks[19]. Additionally, restoration is and activity that has been declare an urgent measure, according with the USAID Vulnerability analysis." The potential for a sudden reversal to a drier climate makes it more urgent to take advantage of the current wetter-than-average climate to carry out reforestation of watersheds and other adaptive measures" [20].

Figure 10. Example of net effect of canopy cover on percolation rates in soil (hydraulic conductivity)



Source: Berry et. al., 2020

61. Adaptation Measures need to be tackled from an integral perspective, therefore the Ecosystem based solutions must consider that Coastal areas are the downstream components of watersheds strongly influencing if not determining the structure, salinity gradient, nutrient availability, pollution load, ecosystem metabolism, and many other characteristics of coastal zone ecosystems buffering it against weather events. To be not just sustainable, but fully protected and continually restored as necessary coastal focused restoration must move upslope and address the sources of impacts

[19] There are no issues of land tenure in the intervened area. The areas identified for intervention do not have permanent settlements.

[20] Vulnerability and Resilience to Climate Change in Southern Honduras, Byers, B. Miller K, et all. 2013. https://www.agrilinks.org/sites/default/files/resource/files/Southern%20Honduras%20Vulnerability%20Assessment%20Report_CLEARED.pdf.

62. **Furthermore, the three participating nations are active members of Initiative 20x20** (https://initiative20x20.org/) a country led effort to change the dynamics of land degradation with a goal to initiate restoration of 50 million ha of degraded land by 2030.[21] Country members already commit to have national restoration plans, NDCs reflecting restoration, and to participate at the ministry level in annual meetings to discuss strategies and plans. This engagement sets a perfect policy instrument to scale up the restoration actions where they serve as an adaptation measure in the targeted area.

63. The initiative—launched formally at COP 20 in Lima—supports the Bonn Challenge, a global commitment to bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030, and the New York Declaration on Forests that seeks to restore 350 million hectares by 2030. At COP 25 in Madrid (2019) Ministers of Environment led by the President of the COP issued the Madrid Declaration (https://initiative20x20.org/news/declaration-restoration-ministers-unite-restore-land-cop25) committing the Initiative to an expansion of efforts and requesting the financial mechanisms to the UNFCCC to commit additional resources and support to restoration as a central effort to address climate change issues in the region. The initiative is supported by 80 technical organizations and institutions

64. **Partners to the Initiative have started restoration processes on 195 projects over 25 million ha in Latin America.** A partial list (54) of these projects, including a summary description as well as photos and videos can be consulted at: https://initiative20x20.org/restoration-projects. Financial partners to the initiative are listed at: https://initiative20x20.org/restoration-projects.

65. **Areas selected:** Specific areas for implementing adaptation measures were selected by the participating nations on the basis of location, past vulnerability to extreme weather events, overall status of land degradation **in public or protected lands, low levels of income, strong presence of vulnerable people around the public areas** and the interest of the local communities.

    - **In Belize**, the adaptation measures will be implemented in the Monkey River Delta and Watershed (ca. 9,000 ha) around an area inhabited by poor fishing villages and Creole settlements with limited access to services. Several key upstream impacts, such as water abstraction, contributes to changes in the Delta and Watershed area, including the erosion of Monkey River Village. Unsustainable practices in the region (riparian deforestation, wetland damage), combined with the consequences of weather extremes are contributing to losses of livelihoods and deterioration of local ecosystems. These specific areas have been selected in consultation with the local community represented by the Monkey River Watershed Association, Toledo Institute, and others.
    - **In Honduras,** the areas targeted for restoration are in and around the Cusuco and associated coastal areas. These areas all together protect more than 329,449 has of forest that extends from an altitudinal gradient to the alluvial Sula Valley between the Chamelecón River and the Motagua River. The region includes unique

[21] Initiative 20x20 is currently supported by the International Climate Initiative of the Government of Germany, the Climate and Energy Fund of the Duchy of Luxembourg, the Norwegian International Climate Fund and the CARGILL foundation. Details on the support provided can be found in the annexes.

ecosystems including tropical cloud forest, lowland tropical forest, mangroves and lagoons some of which are included in the list of wetlands of international importance (Ramsar sites). These protected areas are responsible for producing most of the water supply to Puerto Cortés (the most important commercial port city), Omoa and Tela. Increased pressured from agricultural activities and population growth are degrading upland and lowland forest leading to soil destabilization, soil erosion, water contamination and flash flooding jeopardizing the water supply for the population that lives in these urban centers and coastal zones. These areas are populated by subsistence farmers as well as mestizo/ migrant populations that mainly rely on subsistence farming and fishing and are seeking economic alternatives to survive. The specific areas were selected in consultation with representatives of the local communities.

- **In Guatemala,** the project will take place in Cerro San Gil Protected Reserve (47,428 hectares) and Río Dulce National Park (13,000 has). Both protected areas are connected to the Izabal Lake and Amatique Bay through the Río Dulce watershed. There is also an altitudinal gradient that extends from the mountains of the Mico Mountains all the way to Santo Tomás de Castilla Bay. A total of 27 microwatesheds are present. The provision of water is one of the most important ecosystem services that the region provides, since these forests provide water to more than 55 different communities including Puerto Barrios, the largest and most important port city of Guatemala. Most of the people that live around these protected areas are Q'eqchi, Garifuna and Mestizo that practice subsistence farming, artisanal fishing, and tourism, and have very limited access to economic resources**.** The specific areas were selected in consultation with the local community led by FUNDECOR.

66. **Barriers.** Belize, Guatemala, and Honduras are committed to promote actions to strengthen local resilience to extreme weather events and have established a dialogue within the Initiative 20x20 to improve adaptation capacities. There are however several barriers that are preventing an effective response and preparedness. These include:

a. *Poor or non-existing land planning processes inclusive of supportive regulatory frameworks*. The region does not have in place a land planning system at a local level that could be used to guide decisions on land use and allocation of resources to maintain the health of ecosystem services. Further, there are no provisions for exchange of information on practices between countries in the high-risk areas.

b. *Inadequate community or local disseminations of climatic information for early warning alerts is missing*. Local Communities need to strengthen preparedness and reduce exposures. While the region has been battered a number of times by extreme weather events, there is still no adequate and tested warning system at a local level that could be used to minimize loss of life and property. Communities consulted were not aware of any efforts to communicate with enough lead time impending risks of coastal or inland flooding nor of landslide threats. The national weather systems do not have the resolution required at a local level and even when information is collected by local authorities, there is limited sharing of impacts, experiences, and responses.

c. *Absence of technical tools and guidelines for improve Ecosystem services as an adaptation measure in the local areas*. Community consultations in the proposed

intervention area indicated a level of awareness on the potential of good land management practices as a mechanism to reduce landslides and flooding; simultaneously, there is a generalized absence of technical tools and guidelines in support of implementation and maintenance of restoration efforts as an adaptation measure. Likewise, local authorities and community organizations have indicated that they do not have access to data that could help in the adoption of preventive measures.

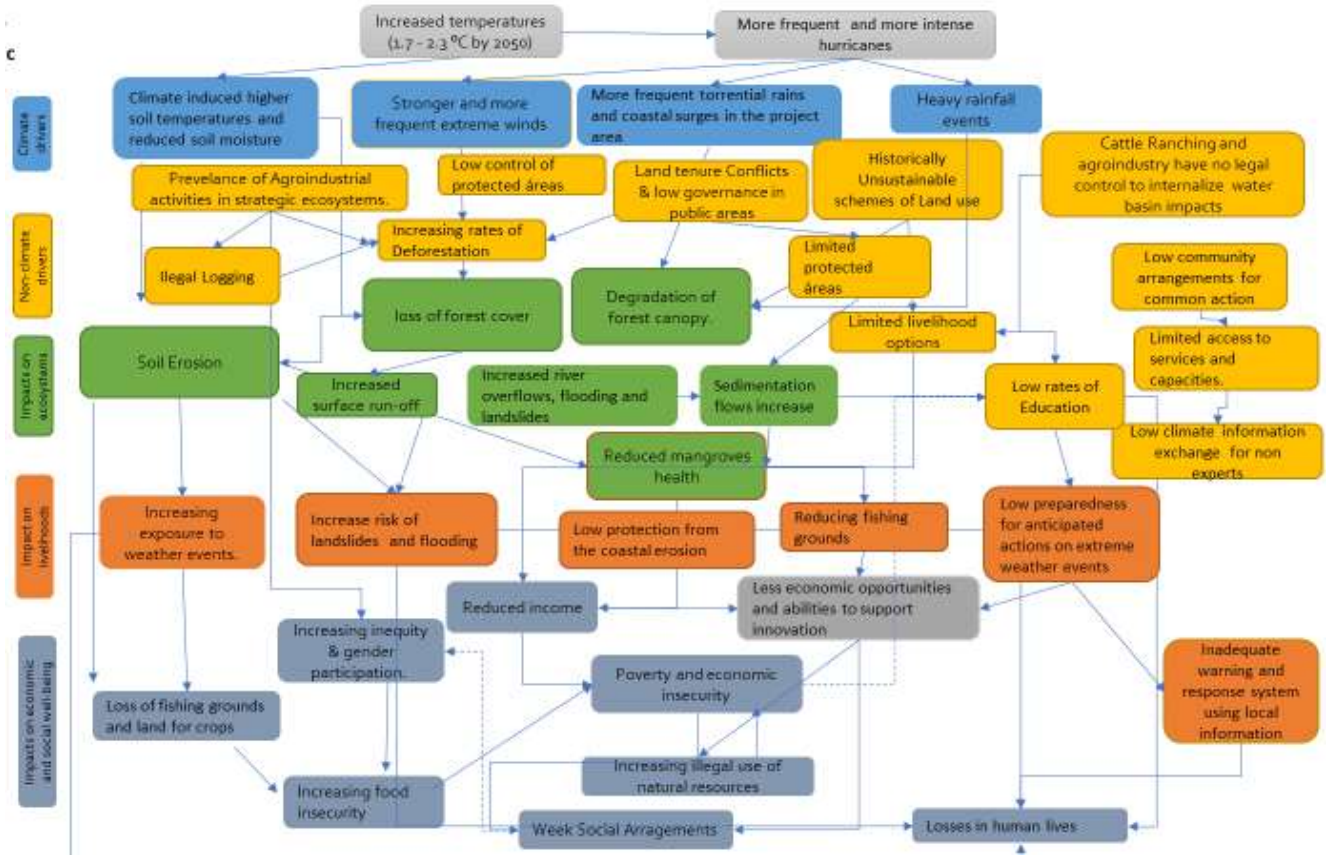
d. *Lack of information on the costs and benefits of restoration*. At a larger national level, there is lack of information on the costs and benefits associated to the recovery of degraded ecosystem functions, including restoring coastal forests and coastal mangroves, as mechanisms to reduce the severity of erosion, landslides and flooding in the areas most affected by extreme weather events. There is information on the cost-competitiveness of restoration (and nature-based solutions in general) but there is not enough hard data that could guide future larger investments in the deployment of restoration as an adaptation tool.

e. *Lack of training and capacity*. A major barrier to facilitate the transfer of know-how is lack of training and capacity even amongst well-motivated community actors. The community consultation indicated a desire for capacity strengthening so that local communities can participate and benefit from the actions proposed under the project. Women are particularly eager to participate in training in some of the target areas. Accordingly, there is a need to ensure that technical know-how on restoration as a key action to enhance resilience in the communities. There is a lack of methods available to technical actors and affected communities so that they can contribute to the restoration processes while improving people's livelihoods.

f. Lack of integrated vision of the coastal ecosystems as part of a mor complex landscape. Coastal areas are the downstream components of watersheds strongly influencing if not determining the structure, salinity gradient, nutrient availability, pollution load, ecosystem metabolism, and many other characteristics of coastal zone ecosystems buffering us against weather events. To be not just sustainable, but fully protected and continually restored as necessary coastal focused restoration must move upslope and address the sources of impacts. This should be reflected in the land use planning and in analyzing the solutions for building resilience and adaptative capacities in the socioecological system. Highly integrated connectivity should be presented as a package in the interventions.

67. **Problem Statement.** The problem being addressed is that the socioecological landscapes associated to the coastal areas in Belize, Honduras and Guatemala (in the Ametique Bay, where extreme weather events are frequent and expected to increase in number and intensity), lack capacities, information, proper policies, regulations and local incentives to use the Ecosystem services of the coastal Atlantic Forest to face the extreme weather events associated to the increases in frequency and intensity of hurricanes. A diagram summarizing the issues faced as a result of the intensification of extreme weather events is presented in the Figure 11 below. Lessons and experience in the implementation of the project will be used by the CABEI, the implementing agency to promote replication throughout the region.

Figure 11. Problem statement



Project objective

68. The objective is to strengthen the climate resilience of communities and the ecosystems in the coastal Atlantic region of Belize, Honduras and Guatemala, framed by Ametique Bay, that is directly impacted by the intensification of weather events resulting from climate change, by deploying Nature-Based restoration efforts in a gender-conscious manner, providing access to community tools and training, supporting local/ community Early Warning Systems, and implementing a regional approach that enhance scaling up possibilities for Restoration Ecosystems as an adaptation measures the Gulf of Honduras. Collection of lessons and experiences will be an important development that could be used by CABEI for replication throughout the region.

69. Specific objectives are.

- To provide access to community tools and training for implementing Restoration as an adaptation measure and an economic activity to support the improvement in their livelihood and wellbeing with emphasis on minority groups and women participation. Providing restoration training at the local level instills skills that contribute to many other sectors.
- To deploy information and enhance channels of communication on both adaptation measures; climatic and weather alerts, improving preparation from extreme rainfall, flooding, landslide events, and coastal storm surges caused by extreme weather events. And results in data and experience to inform further use of restoration of damaged ecosystems as an adaptation tool through-out the region, including by private sector partners.
- To build a regional approach and a joint development of activities and shared resources within the region that improve the cost effectiveness of the deployment and scale up of natural solutions for adaptation and livelihood resilience in the 3 countries and the Central America Region, providing best practices for Land Use Planning at a local level in the three countries which could be further replicated.

Program components and financing

The proposed program has 3 components dealing, respectively, with i) the transformation of regulatory framework to incentivize the use of Restoration as an Adaptation measure, ii) the implementation of nature-based adaptation measures with community approach, and iii) the capacity building, knowledge management, and dissemination of result at local, national, and regional levels.

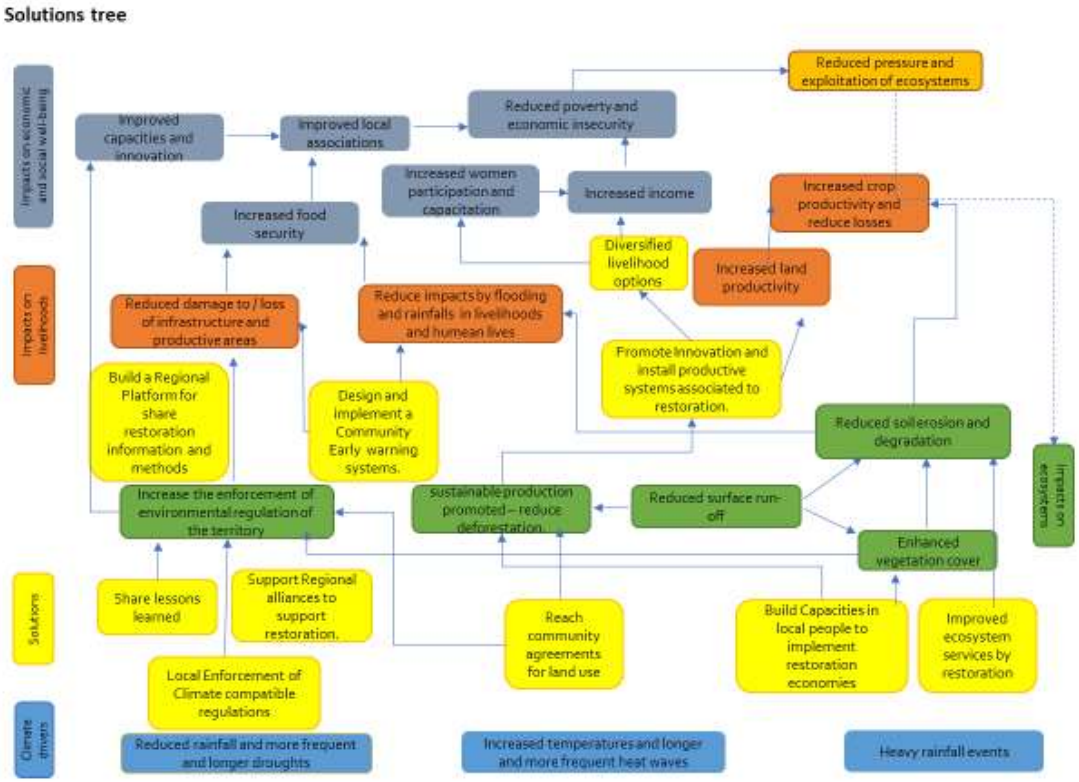
Table 3. Project components, outcomes, outputs, activities, and budgets

Component	Outcome	Output	Budget
1. Mainstreaming Restoration as a key nature-based adaptation measure in national and local regulatory Frameworks and land use planning process for increasing resilience to intensifying extreme weather events with emphasis on minority groups and women participation.	**Outcome 1** Strengthened regulations, planning and policy strategies that support restoration as an adaptation measure to achieve resilience to intensifying extreme weather events.	Output 1.1: Forest restoration is promoted among local, national and regional stakeholders to influence national regulatory framework, subnational land use plans and land use strategies in coastal areas	US$600,000
		Output 1.2: National Determined Contributions (NDCs) include restoration as a priority adaptation measure where relevant.	US$260,000
2. Implementing adaptation measures in selected Landscapes of the Atlantic Forest	**Outcome 2** Designed and implement 3 Local Community early warning system for improving alerts and response capacities to extreme weather events	Output 2.1: Three Community early warning systems designed and implemented responding to local needs of information and with at least one Hydro climatological impact prioritized by each System. The CEWS will be in operation and feeding information into regional Disaster Management platforms and will be designed with emphasis on the needs of minority groups and women participation.	US$700,000
	Outcome 3: Increase Resilience of 3 socio – ecological landscapes in the Atlantic Forest of Belize, Guatemala and Honduras by restoring coastal water basins areas with native species and deploy forest economic activities**.**	Output 3.1: Design, plan and develop enabling conditions for Increased engagement and participation of Communities and social actors (with emphasis on minority groups and women participation) in the three restoration areas in degraded public lands. in coordination and cooperation, in at least one site, with corresponding investments by private partners in private land	US$970,000
		Output 3.2: Three landscapes under restoration activities, one in each country, implementation and maintenance protocols.	US$6,825,000
		Output 3.3: Wider potential for replication by the private sector examined and communicated to the Impact Investors associated to Initiative 20x20 and other financial groups	US$695,000

Component	Outcome	Output	Budget
3: Capacity building, Knowledge & Information dissemination at local, national, and regional levels	**Outcome 4:** Improved knowledge and skills among actors at local, national, and regional levels to scale up restoration as an adaptation activity and build regional exchange platforms	Output 4.1. Increased the knowledge and capacity for implementing restoration as an adaptation measure, in subnational and national stakeholders and 50% of them should be Women.	US$450,000
		Output 4.2. Regional Training program, including activities implemented to shared lessons learned and a Regional Information System to promote the deployment of the benefits and structure of restoration as an adaptation measure from all representative groups of actors (including farmer organizations, women's groups, private sector and government from local to national, private investors) in the Coastal Areas of Ametique Bay and other countries that are vulnerable to hurricanes in coastal zones and that could be used to inform replication efforts led by CABEI.	US$300,000
		Output 4.3: Regional information system focused on land use-based responses information related to the intensification of extreme weather events in coastal zones (managed by the CCCCC).	US$250,000
		Subtotal	US$11,050,000
		Project Management Costs (10.5%)	US$1,160,250
		Project Cycle Management Fee charged by the Implementing Entity (8.5%)	US$ 1,037,871
		Total	US$13,248,121

Actions Tree. The figure below illustrates how the barriers to address the problem are proposed to be tackled.

Figure 12. Actions tree



Projected calendar

Indicate the dates of the following milestones for the proposed project/programme

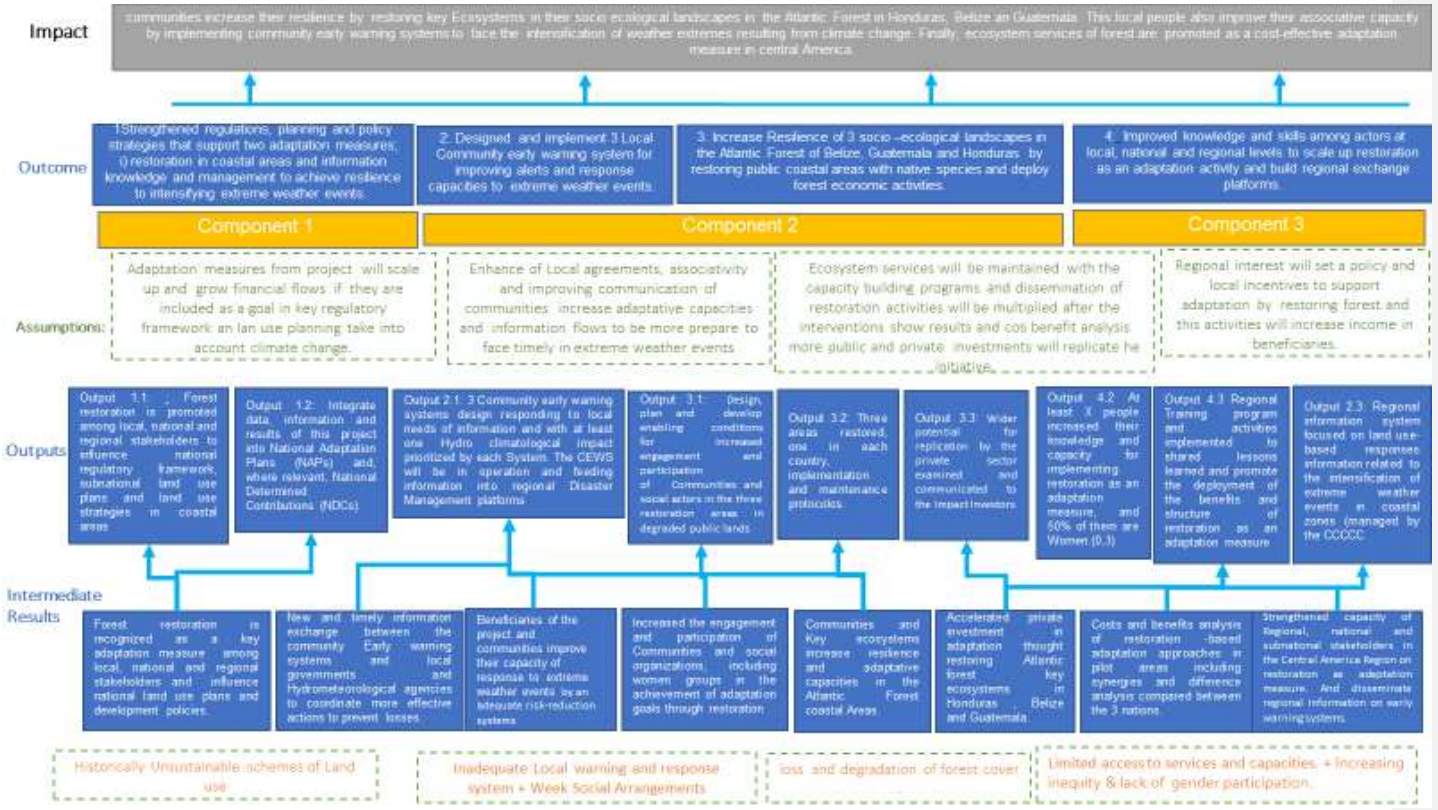
Table 4. Project Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	June 1st, 2022
Mid-term Review (if planned)	June 1st, 2024
Project/Programme Closing	June 1st, 2027
Terminal Evaluation	Dec 30, 2027

PART II: PROGRAMME JUSTIFICATION

A. Project Components

Figure 13. Theory of Change



Component 1. Mainstream Nature-Based Adaptation into National and local Regulatory Frameworks and land use planning process for increasing resilience to intensifying extreme weather events through ecosystem-based adaptation (restoration) (US$0.86 Million)

Outcome 1: Strengthened regulations, planning and policy strategies that support restoration as an adaptation measure to achieve resilience to intensifying extreme weather events.

Output 1.1: Forest restoration is promoted among local, national, and regional stakeholders to influence national regulatory framework, subnational land use plans and land use strategies in coastal areas with emphasis on minority groups and women participation.

Activity 1.1.1 Undertake a regulatory review to select the key regulatory instruments in each country to update for increase the deployment of restoration as adaptation measures, as well as a comparative exchange of information on regulatory approaches between the three countries; the regulatory review will focus on land planning instruments and an assessment of their effectiveness, including identification of gaps and opportunities. The review will be conducted with the participation of local authorities and communities in the three countries with special attention to the participation of minority groups and women.

- The activity will include: a review of all applicable, existing regulation, in cooperation and with the assistance of the ministries and local authorities involved in land use management (Agriculture, Forest, Planning and in the case of Belize, the CZMAI. The review will be led by WRI/CATIE in cooperation with the government authorities.
- The activity will also include a discussion with national and regional authorities on alternatives to institute and/or strengthen the role of land use as an adaptation measure to reduce vulnerability to communities and livelihoods in the Atlantic Coast and will inform potential future replication efforts led by CABEI.
- A gap analysis will be performed in comparison with standards being used elsewhere, including some pioneering activities in the region (province of Guanacaste in Costa Rica). This will be conducted CATIE.
- An assessment of experience of similar measures to address intensification of hurricanes will be undertaken to help assess effectiveness in the context of the target area. This will be conducted by WRI with support of CATIE.
- The results will be shared during a workshop with the participation of local and national authorities, with special attention and encouragement for women participation as well as of representatives from local communities in the three countries. The results will be uploaded at the CCCCC and 20x20 websites and shared through social media with other stakeholders.
- The suggested adjustments will be provided to the national authorities reflecting the results of the discussions with the local and national authorities and representatives from the local communities.

- At least three workshops (one in each country) and follow up meetings will be held to propose updates of relevant public documents for regional land planning and strategies with the participation of local authorities and communities, with emphasis on minority groups and women participation; and,
- At least three technical workshops (one in each country) will be held with national authorities, including the climate change offices, to facilitate identification by national adaptation authorities of suggested adjustments and revisions to NAPs and NDCs.

Activity 1.1.2 Workshops, work meetings to update relevant public documents including regional land planning and strategies with the participation of local authorities and communities with emphasis on minority groups and equal participation of women including specific outreach to women groups

- Forest restoration is promoted among local, national, and regional Institutions and stakeholders to influence national land use plans and land use strategies in coastal areas
- This activity will include a workshop to review with the climate and planning national and local authorities of available options to reform land planning instruments in the region, in order to incorporate the climate adaptation dimension, including any requirements for a gender-conscious local consultation.
- The activity will include the preparation of a protocol to be adopted to incorporate the adaptation dimension and data for land use planning, including from the current project, and made available to local authorities.

Output 1.2: Design and delivering Protocols and Guidelines for collecting information based in community alert system and improve coordination between the local and the national EWS to generate effective action

Activity 1.2.1. Work meetings with national, local authorities and communities, with outreach to women groups to facilitate identification by national adaptation authorities and climate change offices of suggested adjustments and revisions to NAPs and NDCs.

- Evaluated the impact of the achievement of adaptation goals through restoration for each country.
- This activity will include a work meeting with the climate change offices and the staff of the Designated ~~National~~ Authorities in each country to discuss the results and implications of the project activities in the documentation of the NAP and the NDCs.
- A convening of the Policy Committee to discuss the convenience and process to adopt the suggested adjustments.
- A proposal for adoption of changes in the NAP and NDCs in each country will be drafted for consideration and enactment of the corresponding authorities.
- A regional meeting of climate change offices and DNAs to review the adjustments made at a national level and consider implications at a regional level.

As a result of the activities, a substantially improved regulatory framework for the use of restoration as adaptation to climate change measures in the coastal zones will be available. Also,

information on fiscal and regulatory approaches would have been exchanged at a regional level. Restoration options will be included in land planning and land strategy documents and the project outcomes would be incorporated in the national adaptation plans (NAPs) and as relevant in the NDCs.

At a local level, the alignment of local and national regulation, especially on incentives, will directly affect land use planning in the target region. There are many local regulations at the municipality or county level that if aligned to national policies could increase the amount of technical and financial resources to local governments to adapt to climate change effects.

Component 2. Implementing adaptation measures in selected sites of the Atlantic Forest (US$9,190 Million)

Outcome 2: Designed and implement 3 Local Community early warning system for improving alerts and response capacities to extreme weather events (US$0.700 Million)

The project treats IKM as a process of collection, processing, organization, storage and dissemination of data and information amongst the three participating countries, and leverage of this data and information together with people, resources, and processes to achieve a strategic objective[22].

Regulations, planning documents, data and other information resulting from activities in Components 1 and 2 are anticipated to result in an improved guidance to authorities and coastal communities on adaptation through restoration from the access and use to new and timely information systems, providing guidelines and coordinated experience on responses and results of restoration efforts.

The early warning system will target and be designed to reach the entire population In the Monkey River Delta in Belice, the entire population located in between the Cerro San Gil and Rio Dulce National Park and the coast of the Gulf of Honduras in Guatemala and the entire population located between the Cusuco National Park and the coast of the Gulf of Honduras in Honduras.

Youth groups will be targeted for participation and active involvement in the implementation.

Activities undertaken to achieve the outcome

Output 2.1: 3 Community early warning systems design responding to local needs of information and with at least one Hydro climatological impact prioritized by each System. The CEWS will be in operation and feeding information into regional Disaster Management platforms[23]

Activity 2.1.1: Detailed risk and impact analysis will be conducted[24]. If necessary, adjustments to the areas to be intervened will be made.

[22] See UNISDR 2013, Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) Framework and Scorecard. Geneva, UNISDR.

[23] The warning and response systems will be designed to feed information into the CEPREDENAC/SICA platforms.

[24] While a desk review of vulnerabilities at the three sites has been conducted (see activities under Component 3), during project implementation a detailed risk and impact analysis will be conducted.

- An assessment of socio economic and physical risk and impact from weather extremes of the project landscapes and areas of influence will be conducted.
- The exact demarcation of the pilot areas could be adjusted as a result of the analysis.

Activity 2.1.2: Design of 3 local community warning system reliant on remote sensing imagery, on the ground sensors and modeling.

- Identification of system components and design of basic architecture of the system for each socioecological landscape. The system will incorporate additional gauges and cameras at critical points of rivers and the coastal zone, combined with satellite imagery and the use of a flood modeling system.

Activity 2.1.3: Protocols and guidelines of exchange hydroclimatic information and community alerts agreed with the participants in the Community early warning systems

Activity 2.1.4: Design and delivering Protocols and Guidelines for implementing the community alert system and improve coordination between the local and the national EWS to generate effective action.

- Review of system design with local and national authorities and the participation of representatives from local communities.
- Purchase of system elements.
- Test of system including response capabilities by local communities in the event of extreme weather events. The test will be conducted with the participation of local communities and authorities. The system will be managed by local authorities.
- Identification of maintenance protocols, costs and responsibilities.

Activity 2.1.4: Training events on community early warning information systems are delivered in each project landscape to communities, project participants and authorities.

As a result of these activities, outputs will include a regional information system on restoration as an adaptation measure to the intensification of extreme weather events in coastal zones; risk modeling for extreme weather events in the pilot areas; a coastal flood early warning system for the coastal zones; and a costal landslide response system in the Atlantic coastal areas Honduras and Guatemala. Also, the roundtables would be created and functioning. A coastal landslide response system in Belize was deemed not necessary after discussions with the local community, the review of the results of the high-resolution vulnerability assessment and considering the relatively flat character of the downstream delta. ~~Also, the roundtables would be created and functioning.~~

At the local level, communities will have access to time-sensitive information and will hence improve readiness and resilience to extreme weather events. The systems will enhance awareness of risks and create ownership of readiness measures. The early warning systems will be designed and implemented at the local level. Information from the local systems will support national monitoring systems and vice versa. The system at the local level is needed to encourage ownership and use of local knowledge. The granularity of the information (Indicators) of local system is often not captured in national systems; thus, this output is directly related to the target area.

Outcome 3: Increase Resilience of 3 socio–ecological landscapes in the Atlantic Forest of Belize, Guatemala and Honduras by restoring public coastal areas with native species and deploy forest economic activities. (US$8.490 Million)

The development of restoration-based adaptation in coastal areas will increase the resilience of more than 100,000 people in the targeted areas. It will also illustrate the costs and benefits of restoration and avoid degradation to be used as a guidance for scale up this adaptation approach and create more resilient livelihoods, and finally it will allow a clear dialog between technical and community actors.

Activities supported by the regional project under this component, per output include:

Output 3.1: Design, plan and develop enabling conditions for increased engagement and participation of communities and social actors (with emphasis on the participation of minority groups and women) in the three restoration areas in degraded public lands in coordination and cooperation, in at least one site, with corresponding separate investments by private partners in private land.

Activity 3.1.1: Identification and evaluation of restoration options[25] as adaptation measures in the pilot areas and between the 3 nations; under this activity the implementation details of the restoration work will be identified and cost for implementation in the target areas.

- Alternative options for each area will be identified, based on a desk review and a survey of the area in each country.
- The costing of each alternative will be done at a pre-feasibility level, using data available from previous studies and cost data in each country and taking into account any social and political considerations.
- The most cost-effective measure will be identified.

Activity 3.1.2: Detailed Vulnerability assessment and resilience results framework expected from interventions should be worked with the participation of local communities.

Activity 3.1.3: Ex-ante cost and benefits analysis for the selected option at a feasibility level. The analysis will include costing of all elements of the project in the specific areas selected.

- Detailed field survey including assessment of the degree of restoration work required to restore to full canopy.
- Selection of species to be used in the restoration work, based on native nature, ecological characteristics of the sites, associated benefits in biodiversity, and costs of plantation. Including total cost of seedling production for a particular species (seed collection, germination process involved, cultivation to seedling stage, amount of care needed after planting

[25] While there is solid information on the cost, location, and scope of the restoration work at each site, the project makes allowance for confirmation of sites and type of reforestation. Details on the already identified restoration projects are described in some detail in output 3.2.

        - Identification of native species and degree of frequency of species in the restoration plot, including feedback from local communities and local authorities.
        - Identification and costing of required protocol for germination, production of seedlings and planting, including costs associated to identification and collection of seedlings from “mother trees”.
        - Labor costs for greenhouse process, planting and initial maintenance and survey. Identification of support measures required by local community and costing.
        - Estimate of impacts on reduced soil erosion, reduced siltation, modulation of stream and nodal flows of the intended restoration, using literature available on the subject.
        - Cost of monitoring during the duration of the project and assessment of costs and responsibilities for follow up periods.
    - Potential involvement of future private investment in surrounding/adjacent privately-owned areas will be identified[26].
    - Capital, operation, and maintenance costs will be calculated.
    - A timetable (GERT) chart for each area will be developed.
    - Community support activities will be identified and costed.
    - The design will be shared with community leaders and local authorities for comments before work is initiated in each area and will inform future potential replication efforts led by CABEI.

Activity 3.1.4: Review social vulnerability in the areas of the project, taking into account gender balance

- Conduct a review of social vulnerability at the three sites, with special attention to the role and impacts on women.

Activity 3.1.5: Develop a methodology to assess, gender conscious social engagement in the implementation of project activities

- A methodology will be developed to size and document level of engagement, adoption of experiences and gained knowledge and information by regional, local authorities and communities, with special attention to the role of women. Including a Gender Plan.

Output 3.2: Three areas restored, one in each country, including participatory design, implementation and maintenance protocols.

[26] Both Althelia and FCCF have sent letters of interest in this regard, and these can be accessed in Annex D,

These three areas will design and implement restoration actions to respond to vulnerability priorities, one in each country, ensuring the engagement and participation of communities and social organizations, including women groups. The potential impact on livelihoods (recovery of mangrove and fishing ground productivities, reduction of siltation rates of freshwater resources) is also considered. Project resources will be used to restore about 500 ha equivalent[27] through reforestation (5% of the total area lost) in protected riparian areas and mangroves. In the 3 sites, most of the field restoration work, including the development of nurseries, planting and maintenance, will be contracted through local NGOs making use of available knowledge and labor from indigenous and Creole communities in the area under the supervision of a field coordinator.

Preselected areas taking into account local consultations, vulnerability and exposure assessment a Ministerial consultation, those areas are.

- **Belize** reforestation of degraded or denuded riparian areas on both margins of the lower delta with local species selected in consultation with the local community, to ensure protection and maintenance; assisted recovery of buffer areas with agricultural areas and coastal mangroves. The estimated cost of all activities in Belize under component 3 is US$1.5 million. The estimated cost of all activities in Belize under component 3 is $1.5 million. The budget covers the revegetation (trees and bushes) and/or thickening of forests in 500 ha of riparian areas, including border areas with agricultural areas as well as mangrove replanting. It also covers the cost of one central nursery and one central seed collection system (details in the table below).
- **Guatemala** restoration work, following the description of activities indicated above, will include restoration of secondary forests in the reserve through planting of endemic species, reforestation of denuded slopes with endemic species. The potential for reduction in siltation rates and impact on freshwater resources is also considered. The areas will be confirmed as part of the activities under component 3. The estimated cost of all component activities in Guatemala is US$2.5 million. The budget covers the restoration of 1800 ha of secondary forests in the reserve and revegetation of coastal areas. It also covers the cost of two central nurseries and two seed collection centers (details in the table below).
- **Honduras.** The areas to be restored have been pre-selected on fields draining toward the coast, in areas of the National Park, neighboring the reserve that would be most impacted by extreme events. Restoration, following the description of activities indicated above, will focus on restoration of secondary forests in the reserve through planting of endemic species, reforestation of denuded slopes with endemic species. Assisted recovery of coastal mangroves in on the coastal zone through planting of Rhisophora mangle and Avicennia spp. The budget covers the restoration of 1800 ha of secondary forests in the reserve and revegetation of denuded areas and coastal areas. It also covers the cost of four central nurseries and four seed collection centers (details in the table below). The project

[27] Most reforestation will be done through a process of enriching or increasing forest density in degraded areas toward a goal of 1200 trees per hectare. In some cases, where areas are denuded, the area will be reforested. For purposes of cost estimates, the number of trees planted result in a number of ha equivalent or number of trees planted divided by 1200 trees per hectare. The same calculation has been made for all pilots.

Table. Summary of component 3 restoration interventions

Country	Area (ha)	Type of intervention	Estimated number of plantings (millions)	Nurseries	Seed collection centers
Belize	500	Revegetation (trees and bushes) and/or thickening of forests in riparian areas, including border areas with agricultural areas as well as mangrove replantings	0.6	1	2
Guatemala	1800	Restoration of 1800 ha of secondary forests and denuded areas in the reserve and revegetation of coastal areas.	2.2	2	3
Honduras	1800	Restoration of 1800 ha of secondary forests in the reserve and revegetation of denuded areas in the reserve and in coastal areas.	2.2	4	4

- The specific location of the areas to be restored through different activities (see the summary table below for a per activity breakdown) within the pilots has been identified in consultation with representatives of the local communities[28] and will be further confirmed as part of activities under component 2.

Table. Summary of specific location and costs of the restoration activities.

Site	Restoration activity	Total area (ha)	Remarks
Belize	Recovery of denuded or degraded riparian areas on both sides of the Monkey River lower delta	350	Areas identified through the assistance of the MRDWA.
	Mangrove recovery at the mouth of the Monkey River	5	Areas identified through the assistance of the MRDWA.

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[28] In terms of community leadership in the selection of areas, in Belize the areas were selected by the Monkey River Watershed Association, Y'axche Conservation Trust, and Toledo Institute for Development and Environment. In Guatemala the areas were selected in consultation with FUNDECOR and in Honduras in consultation with MOCAPH Mesa de organizaciones CoManejadoras de Áreas Protegidas de Honduras.

	Revegetation of border areas with banana and other agricultural plantations	145	Areas identified through the assistance of the MRDWA.
Guatemala	Reforestation of degraded forest areas on north eastern slopes in the Cerro San Gil and Rio Dulce basin	1000	As identified through the high resolution analysis (shown as highly suceptible to landslides or in flood proning areas) and GFW hystorical degradation analysis.
	Reforestation of denuded areas on north eastern slopes in Cerro San Gil and the Rio Dulce basin.	700	As identified through the high resolution analysis (shown as highly suceptible to landslides or in flood proning areas) and GFW hystorical degradation analysis
	Other restoration areas including of coastal vegetation	100	As identified with the assistance of FUNDECOR
Honduras	Reforestation of degraded forest areas on north eastern slopes in the Cusuco Park and buffer area	800	As identified through the high resolution analysis (shown as highly suceptible to landslides or in flood proning areas) and GFW hystorical degradation analysis
	Reforestation of denuded areas on north eastern slopes in the Cusuco Park and buffer area	900	As identified through the high resolution analysis (shown as highly suceptible to landslides or in flood proning areas) and GFW hystorical degradation analysis
	Other restoration areas including of coastal vegetation	100	As identified through the local consultation process
Total			

Activity 3.2.1: Implement the methodology for engagement specific vulnerable groups in the project activities (with emphasis on minority groups and women).

Activity 3.2.2: Convene and Support the consolidation of a gender-balanced local restoration roundtable/network in each pilot area to host training events.

- A review of the recommendations of the Gender Analysis will be discussed with local communities.
- An informal network of community leaders and women-based groups will be organized supporting community ownership and participation in project activities.
- The network provides a review function in each country for the project activities at each target area.

Activity 3.2.3: Restoration of public coastal areas through reforestation with native species in the Cerro San Gil Reserve in Guatemala, the Monkey River Delta and Watershed Riparian areas in Belize and Cusuco National Park and buffer areas in the Sierra del Merendón Municipal Reserve in Honduras and associated mangrove areas. The implementation will include:

- Selection of the local community groups/organizations that will assist in the implementation under the supervision of the country director.
- Confirmation of costs and timetable of execution.
- Siting and construction of community greenhouses.
- Implementation of protocols for germination and production of seedlings of native species.
- Planting, and maintenance.
- Any correction/supplementary activities as may be necessary.

Activity 3.2.4: Design and implement a monitoring program to determine impacts, costs and benefits of adaptation to intensifying extreme weather events through restoration of coastal landscapes and ecosystems and report on results. This will include:

- Identification of meaningful and measurable parameters for monitoring of the impacts of each of the pilot activities.
- Exchange of information between the three countries on the state of monitoring efforts.
- Collection of data on financial costs of the pilots once implemented, including operation and maintenance.
- Preparation of a financial report with the data above and an analysis of the anticipated benefits to the local communities achieved through the reduction of vulnerabilities on communities and livelihoods.

Output 3.3: Wider potential for replication by the private sector examined and communicated to the Impact Investors associated to Initiative 20x20 and other financial groups and Pipeline of potential adaptation through restoration and avoided degradation projects through the involvement of technical partners, private sector including Impact Investors associated to Initiative 20x20 and communities.

Activity 3.3.1: Preparation of guidelines for implementation of cost-effective adaptation-through- restoration options for the Atlantic coast ecosystems.

- The guidelines will be drafted considering state of the art experience applicable to the wider Caribbean basin. The Caribbean Climate Change Community Center (CCCCC) will participate in the preparation of the guidelines.

Activity 3.3.2: Design and analysis of the Plan for transition livelihoods to a more sustainable economic activities through implementing restoration economies in the areas of the project implementation.

Activity 3.3.3: Preparation of a pipeline of restoration projects using the experience gathered with the three pilots and dissemination of the pipeline to the wider impact investor community under Initiative 20x20 and other potential sources of funding.

- A pipeline of restoration projects will be identified using the experience gathered with the three pilots and dissemination of the pipeline to the wider impact investor community under Initiative 20x20 and other potential sources of funding. The pipeline will be identified taking into account the potential replicability of the

projects, their social impact, including the potential for active community participation, and the potential business outlook for the projects (for example, productive restoration, income from fishing and non-wood products) that could be further explored for financing through CABEI.

This includes:

- Review of the costs and replication potential of the pilot activities on other areas in the Atlantic Coast of the three countries. The three regional implementations by the project will illustrate the costs and benefits of restoration as an adaptation measure that could be used to inform replication efforts in the region. The table below indicates the additional benefits anticipated at each site.
- Identify a portfolio of productive restoration opportunities in the target area.
- Planning and executing of an Investment Roundtable (using the protocols of Initiative 20x20) with the wider set of 23 Impact Investment Funds linked to Initiative 20x20[29] to present and discuss opportunities for productive restoration in the area.
- Identify potential local partners for further work with members of the community of Impact Investors of Initiative 20x20 and others.
- Identify and support follow up activities by the Initiative 20x20 to pursue the most promising of the opportunities identified.

Activity 3.3.4: Summary report of impact and financial benefits of forest restoration-based adaptation in coastal zones.

Even if restoration is currently being carried out in some areas within the region of focus, it has generally not adopted an approach specifically focused in building resilience to the effects of climate. This project will build adaptation into the projects developed -establishing a link to the target areas' peoples' system. The projects, and all actions building towards them, will have a replication potential that facilitates replication (through financing and the potential to mainstream the adaptation components) in other key areas of the region. The participation of communities in the target areas and ownership in the project will be crucial to ensure permanence, replication and additionality of the restoration actions for adaptation.

[29] Initiative 20x20 has 23 associated impact funds. The full list can be consulted at: https://initiative20x20.org/financial-partners These partners and other financial institutions have started restoration work on 195 projects on more than 25 million Ha throughout the Latin American region. A partial list of projects with photos, videos and interviews can be consulted at: https://initiative20x20.org/restoration-projects . Besides the investment in restoration activities, the Initiative also is active in political dialogue at the level of Ministers and a technical support function under which over seven technical reports have been published or are under elaboration on topics related to restoration issues in the Latin American region.

A description of the Initiative and the strong political support in the region, including from the three participating countries can be consulted in Annex D. WRI acts as the secretariat to Initiative 20x20 and CATIE and WRI are members of its Executive Committee.

Component 3. Capacity building, Knowledge & Information dissemination at local, national and regional levels (US$1 Million)

In support of the activities sponsored under the program under components 1 and 2, all local actors including women and members of marginalized groups have improved knowledge and skills to enable communication, planning, implementation and evaluation of adaptation through restoration and are informed participants in the changes sought under the project participating in the implementation of the pilots[30]. It is also an expected result for this component is that the information generated by the project is shared with national and provincial authorities and with actors in other countries affected by hurricanes in coastal zones and these increase their awareness and knowledge of the role of land restoration as an adaptation measure and inform potential replication efforts.

Outcome 4: Improved knowledge and skills among actors at local, national and regional levels to scale up restoration as an adaptation activity and build regional exchange platforms.

Output 4.1: Increased the knowledge and capacity for implementing restoration as an adaptation measure, in subnational and national stakeholders and 50% of them should be Women.

Activities to attain this output include:

Activity 4.1.1: Conduct a participatory identification of gender-conscious capacity building needs in priority landscapes in all three countries.

- Survey and inventory, inclusive of the results of the community consultation, capacity building needs with special attention to any requirements by women organizations and women groups.
- Drafting of a capacity building agenda in each project area.

Activity 4.1.2: Prepare cross-project, country-specific and landscape-specific capacity-building plans for government staff and for communities.

- Based on the results of survey and considering any emerging needs deriving from the implementation of the project a detailed plan of capacity building activities with be prepared.

Activity 4.1.3: Implement capacity-building plans through regional and local workshops, field courses, hands-on learning in the execution of project activities among government staff.

- An emphasis of the plan will be on gender-conscious activities. At least one capacity building activity to government staff per country will be executed during the duration of the project. And At least 2 capacity building activities to communities per country will be executed during the duration of the project.

[30] Key local actors in the three countries have been identified during the community consultation and are listed in the annexes. A number of actors have the already knowledge and skills and have been working on environmental and social issues in the target area. These are also listed in the annexes.

Output 4.2: Regional Training program, including activities implemented to shared lessons learned and a Regional Information System. promote the deployment of the benefits and structure of restoration as an adaptation measure from all representative groups of actors, including farmer organizations, women's groups, private sector and government from local to national, private investors.in the Atlantic Forest of the Coastal Areas of Honduras Gulf and other countries that are vulnerable to hurricanes in coastal zones. **(0.90)**

Activity 4.2.1: Design an International Training program to expand learning and capacity development among other 20x20 countries in Central America.

- The Regional Training Program will target both national level decision makers and local technical staff involved in restoration actions for the three participating countries. The Regional Training Program builds on CATIE's experience designing and implementing courses in the thematic areas of restoration, adaptation to climate change, agriculture among other topics.
- Experience gained during the design of the pilots under component 3 and the design of the warning systems under component 2 will be used to structure an international training program at CATIE to a wider audience of interested parties in other coastal zones in Central America and the Caribbean.
- An international training course will be held at CATIE.

Activity 4.2.2: Three workshops including people form the three countries implementing restoration activities, involving all actors are conducted: i) at second year of project to share kickstarted project activities on adaptation~~i) at project inception to share project goals and plans~~, ii) after three years for ~~the evaluation of~~ showcasing progress and engagement, and iii) at before project termination to disseminate lessons learned and tools~~for the evaluation of achievements~~.

- Workshops for the three countries are designed with participation of local authorities and communities, including groups led by women.
- The workshops are held at local venues at the project sites.
- Information on the progress and results of project activities will be collected and organized for further dissemination.
- Organized information will be uploaded to the 20x20 and CCCCC websites.
- Newsletter and blogs will be drafted by project coordinator and others for uploading routinely into the sites and other social media.
- The curriculum and results of the training program will be posted at the 20x20 and CCCCC websites.

Activity 4.2.3: Upload Information generated by the project, including from private partners and communities into the 20x20 website and CCCCC website, other social platforms and is shared through institutional communications tools such as newsletters and blogs.

Output 4.3: Regional information system focused on land use-based responses information related to the intensification of extreme weather events in coastal zones (managed by the CCCCC[31]

Activity 4.3.1: Design a regional exchange information scheme for provision of information and exchange of experiences on responses and results; the design will consider existing weather information systems as well as international networks. The system is expected to be capable of reporting in real time, the occurrence of extreme events in the Atlantic Coast. The design will include the capability to maintain a data base on past events, impacts and responses.

- The activity will include collecting relevant material on the subject from documented experiences in the region, including the wider Caribbean.
- A discussion with hydro meteorological and climate change authorities in the three countries to discuss scope and content.
- A design of the system and hosting of the same at the CCCCC and 20x20 websites.

Activity 4.3.2: Update of the 20x20 website, CCCCC website and other social media tools with technical information and guidelines for adaptation through restoration in coastal areas.

- The results of the assessments and guidelines and other relevant information on the use of restoration as adaptation tools will be uploaded in the 20x20 and CCCCC websites.

Component 4 is directly focused in the population of the target areas. In the three countries, capacity building efforts usually occur in main cities – hindering participation from community members in remote areas. Furthermore, climate conditions and hazards are different or more specific than those addressed at national scale. Outputs 4.1 through 4.3 are centered in building knowledge and access to information relevant to communities in the target areas (e.g., building efforts on implementing restoration techniques for adaptation for local conditions, promoting peer-to-peer learning from the people within the landscapes), only enabling linkages with different countries to fill information gaps and increase ownership of novel restoration actions for adaptation.

All activities will emphasize the participation of youth groups in training and implementation.

B. Innovativeness

Describe how the programme would promote new and innovative solutions to climate change adaptation, such as new approaches, technologies, and mechanisms.

[31] Caribbean Community Climate Change Center

Ecosystem-based Adaptation in coastal watersheds. Ecosystem Based Adaptation including Restoration approaches are still emerging in the policy and technical design. This project represent the first time Communities will deploying in the region as measures to strengthen resilience to the intensification of extreme weather events in the Atlantic Hurricane Corridor. These approaches are an alternative or complementary to hard infrastructure, can be more cost-effective, and have substantial co-benefits for local communities and biodiversity. By generating these co-benefits (sustained livelihoods, improved food security, carbon sequestration, and biodiversity and habitat conservation), they can also help tap into new revenue streams and engage new "green" investors (Browder, et. al., 2019; Reguero, et.al., 2018) including the community of Impact Investors associated to Initiative 20x20 (https://initiative20x20.org/financial-partners).

Adaptation as forward planning. The inclusion of restoration of coastal ecosystems in regional land planning at a provincial level will drive authorities and other stakeholders to think through long-term considerations involving the adaptation to climate dimension. This will be an innovative approach and practice for the region in contrast with the existing praxis which only considers emergency situations and reactive response. The new practice will encourage a stronger focus on prevention by local governments. It will also promote the participation of local authorities in the issue of adaptation.

Regional cooperation to address the consequences of climate change on a specific trans-national geographic region and exchange of information on adaptation investments, early warning tools and data generation. The project focuses on the development of common approaches and exchange of experiences within this area. The project will also initiate a regional (coastal) communication programme and form a regional information effort that will result in the collection, analysis and dissemination of information generated through the project and from other sources. The information will support decision-making and allocation of resources in the participating nations. The linkage of the three countries under the project will further facilitate sharing of experiences and adoption of best practices.

Linkage to biodiversity and ecosystem services. The regional landscape in the Atlantic Coast has suffered substantial losses of biodiversity, as documented through Global Forest Watch and other survey tools. In the case of Honduras, unsustainable practices have resulted in the loss of biodiversity and the critically important ecosystem services it provides in the project area. The deployment of restoration actions will achieve adaptation based on regional biodiversity, emphasizing that climate resilience is an ecosystem service.

Driving innovation in Economic possibilities for the region. The practices sponsored under the project, at a pilot scale will help to generate data and in the long-term document how restoration can reduce the impact of extreme weather events as measured through the effects on landslides, flooding and the effects of storm surges.

Nurseries shall be established that specialize in development of an assortment of native forest trees important and necessary in landscape recovery projects, and that can serve as base nurseries and training centers that help establish satellite nurseries in other parts of Belize.

This initiative shall also provide a detailed cost analysis and complete description of all necessary steps involved in the implementation of a forest restoration effort. This will help guide development of realistic and adequate budgets for new proposals at other sites within Belize.

Recovering public land will contribute to value the benefits that forest reserves and national parks provide well beyond the immediate contribution to adaptation. As the pilots will take place

on public lands, the issue of land tenure does not apply[32], Impacts on livelihoods, will be ascertained during project implementation.

[32] The presence of squatters in the intervention areas will be assessed during implementation. There seem, prima facie, that sites in Belize and Honduras do not have squatters.

C. Economic, social and environmental benefits

Describe how the programme would provide economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the programme would avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

This project focuses on addressing consequences of the intensification of extreme weather events in the land area of the Atlantic Coast most prone to hurricane landings in Central America. The use of land restoration as the adaptation measure will bring substantial economic, social, and other environmental benefits presented in Table 4.

Table 4. Summary of benefits from restoration pilots as identified during community consultations.

Area	Country	Target population	Adaptation	Environmental	Social	Economic
Restoration of the Monkey River Delta and Watershed including mangroves and riparian areas (500 ha)	Belize	Artisanal fishing communities and Creole settlements	Protection against sea storm surges and salination. Improvement in water retention rates in Delta and Watershed, reducing extent of flooding.	Reduction of siltation rates in the Delta and Watershed. Reduction in potential for salination of freshwater resources.	Improvement in access to fishing and recreational areas.	Recovery of mangrove productivity. Recovery of fishing grounds affected by siltation.
Restoration of degraded areas in the Cerro San Gil Reserve and Rio Dulce Park (2000 ha)	Guatemala	Q'eqchi minority, Garifuna and mestizo populations.	Reduction in the likelihood of mudslides during extreme rainfall events. Reduction in the extent of flooding events.	Recovery of biodiversity and ecosystem integrity in Cerro San Gil and Rio Dulce. Improvements in water quality for local consumption.	Recovery of integrity of ancestral lands of Q'eqchi community.	Reduction of siltation of watersheds. Improve water quality for human consumption.
Restoration of degraded areas in the Cusuco National Park and associated coastal mangroves (2000 ha)	Honduras	Artisanal fishing communities (Garifuna); Local small agricultural producers; women associations.	Reduction in likelihood of mudslides during extreme rainfall events. Reduce extent of flooding events. Prevent salinization of coastal lagoons.	Recovery of biodiversity and ecosystem integrity in Sierra del Merendon. Improvements in water quality for local consumption.	Improvements in access to fishing and recreational areas.	Recovery of mangrove productivity. Recovery of fishing grounds affected by siltation. Reduction in salination of coastal lagoons.

Program objectives, activities and indicators all focus on the need to reduce the negative social, economic and environmental impacts caused by the intensification of extreme weather events on the communities and livelihoods in the target area. These impacts of extreme weather events are greatly increased by degradation of coastal areas that reduce the resiliency of the landscape to buffer against these impacts. One of the main beneficiaries from the implementation of the program activities will be local communities in the Atlantic region, around the Gulf of Honduras which have traditionally included minority and marginalized populations.

The implemented activities will contribute to reductions in losses of livelihoods and ecosystems.

All of these listed jobs and costs represent a potential for local job development in a time when Covid-19 has collapsed tourism and floods have recently destroyed many crops. Local employment and benefits shall go a long way toward cultivating long term community support and buy-in for restoration initiatives.

Nurseries shall be established that specialize in development of an assortment of native forest trees important and necessary in landscape recovery projects, and that can serve as base nurseries and training centers that help establish satellite nurseries in other parts of the countries.

Social benefits.

Improved resilience to extreme weather events will result in substantial social benefits including a more rational allocation of scarce public resources, improved preparedness and response systems to extreme climate events, and reduced vulnerability to those events. The activities supported will include actions that will improve land planning. Once implemented, these plans are expected to revert in better use of local natural resources and enhance local and traditional knowledge in sustainable natural resource use. There is an expectation of improvements in welfare as these resources are managed more efficiently.

Communication and awareness measures included in the program will contribute to engage relevant stakeholders, including vulnerable groups, to raise awareness about the importance and sustainable use of forest resources and strengthen collaborative efforts to inform and increase awareness to local communities of implemented strategies to prevent, reduce and better respond to impacts of weather extremes.

Monitoring activities will identify and re-define priority needs and strengthen coordination efforts with local governments and communities to improve climate change adaptation measures.

Community-based early warning and response systems are included in the project. These will be designed and deployed in collaboration and in response to community-based perception of risks, accounting for the local communications and information conditions, considering the latest science and monitoring systems design.

Gender sensitive considerations. All activities and data generated will be screened for gender considerations. A gender sensitive approach will also be included in the design of communication, dissemination, and awareness activities. All project activities will include the results of a diagnosis on gender issues and considers the participation of a gender specialist with experience in climate emergencies. The project includes gender specific indicators as appropriate.

Economic benefits.

Reduction of damages. Regional planning and the physical implementation of the restoration measures will reduce exposure and risks. Economic benefits will be achieved over time by the reduction in anticipated damages induced by landslides, flooding and storm surges and coastal erosion. Reduction of river flow also reduces the ability of river waters to push salt wedge intrusion seaward.

Cost effectiveness. The adoption of nature-based solutions is a guarantee of cost effectiveness when compared with hard infrastructure to prevent landslides, flooding, or storm surges. Reforestation costs are typically a fraction of the costs associated with engineered retaining slopes, flooding barriers, or coastal walls (Narayan, et. al. 2016; Constanza, et. al. 2008).

Avoided cost of illness and lost productivity. Program activities are designed to reduce the impacts from extreme weather events in the area. Reductions in the loss of labor productivity and improve food security would result in economic benefits in the area. Building future food security (alleviating hunger and improving nutrition) requires multi-functional and integrated landscape approaches and community-level engagement to re-imagine sustainable forest use whilst simultaneously conserving the delivery of ecosystem services.

Participation in project implementation. Of immediate impact is the scheduled participation of the local communities in the planning and labor required for work in the areas to be restored in the pilot areas. A substantial share of the project resources will be deployed at a local level during the duration of the project. This is a key contribution during a time when a pandemic has depressed other usual sources of employment and income.

Productive restoration. this program will increase tree cover that can reduce the pressures of the agricultural land on existent forest areas. Parallel investment by Impact Funds associated with Initiative 20x20 in productive restoration will take place independently of the project in some buffer areas in Guatemala and during and after project implementation it will be considered in areas in Belize and Honduras. The parallel activities will generate jobs and enterprises.

In generic terms, reforestation and landscape management is anticipated to result in substantial economic benefits. In a report (Vergara W. et al, 2015) the economic benefits of land restoration efforts were estimated to result in monetizable NPV of about US$1000/ha.

Recovery of ecosystem services and livelihoods. The proposed measures (see table 3) will also recover and protect ecosystem services that are linked to immediate benefits to the local communities in terms of welfare and livelihoods.

Replication value. The project will result in lessons learned and experiences that will be mined by CABEI as implementing agency for potential use in replication throughout the region.

Participation of local communities, vulnerable groups, and indigenous communities. As indicated elsewhere in the report, all the activities under component 2 (early warning systems and strengthening of resilience through restoration of 3 public areas), will be implemented with participation of local communities, vulnerable groups, and indigenous communities. The early warning systems will be implemented and managed locally and will be tailored to the communication needs and local physical environment. These groups will participate in the final design by incorporating views and requirements. The local implementation groups in each country already incorporate different ethnics and reach to different socio-economic groups.

Activities related to the implementation of the restoration of landscapes will be managed by the local partner organization groups and will rely on the local communities for implementation. All labor requirements will be local in terms of planting, establishment and supervision – focusing on the creation of local seed collection centers and implementation of the nurseries.

Environmental benefits

Land restorations constitute the central character of the programme and represent a sound environmental approach. Land based options as adaptation measures will promote the recovery of ecosystem services.

However, forests, wetlands, and mangroves in general are inadequately protected, and thus remain at high risk of deforestation and degradation due to land-use change from natural systems to agriculture (e.g., subsistence agriculture, large-scale export agriculture, and livestock systems). The use of restoration and conservation of these lands for purposes of risk reduction will add to the rationale for protection. The proposed programme contributes to reduce forest and mangrove loss with subsequent restoration activities as well as activities to promote a coherent set of policies and regulations to protect ecosystems in coastal areas as adaptation measures.

Specifically, the intended interventions will contribute to more resilient ecosystems and ecosystem services; biodiversity conservation; reduced likelihood of floods in surrounding coastal areas; reduced likelihood of landslides in the project area and areas of influence.

D. Cost-effectiveness

Describe or provide an analysis of the cost-effectiveness of the proposed programme and explain how the regional approach would support cost-effectiveness.

Regional approach. The three nations are exposed to the same level of risks and share a vulnerable area prone to weather extremes (Amatique Bay, part of Hurricane corridor). Since all countries will face these similar risks and vulnerabilities to the same incoming extreme weather events, a regional approach will improve the cost effectiveness of the solutions. The joint development of activities and shared resources within the region will play a key role in improving cost-effectiveness. Also, the cultural and social similarities of affected populations in the coastal areas in the three countries calls for a regional approach. The use of restoration approaches rather than hard infrastructure is expected to yield lower costs and result in longer-term adaptation impacts. Involvement of the private sector in Guatemala, will ensure that solutions deployed are cost effective. Dissemination of lessons learned will contribute to drive future costs lower.

The regional approach will support the cost-effectiveness of the proposed interventions in the three main aspects:

First, the regional approach will mitigate the risk of leakage potential from restoration policies in land use planning. Often, improvements in policies within a country will reflect positively in that country's land use, but export drivers of degradation to neighboring countries or areas, thus increasing the costs, and decreasing the effectiveness of the overall actions. To avoid this negative effect, aligning local regulatory frameworks will play a role in enhancing cost-effectiveness.

Second, through improving capacities and peer-to-peer learning through the knowledge and dissemination component, synergies will arise as stakeholders from priority areas exchange experiences on past extreme weather events. These exchanges will be instrumental in co-creating adaptation strategies based on restoration. In terms of cost, this ensures that better regional and local strategies can be designed based on the local experiences, reducing the costs, and increasing ownership of the actions. Furthermore, exchanges within the region will improve coordination of early alert systems and actions as knowledge of a response are useful inputs in informing better action in response to extreme weather events.

Third, developing a co-creation laboratory to design and implement adaptation measures, exchanging key lessons during the planning and execution phases of the activities will improve the cost-effectiveness of implementation as experience and derived lessons from one country developing adaptation measures could save cost to other actions that are implemented in other landscapes and countries.

~~Also, some of the investors associated to initiative 20x20 already have an interest in the region at large and analysis made at one site are replicable and can easily inform other sites in the region.~~

Cost-effectiveness of planned restoration measures. Restoration of coastal ecosystems (reforestation, mangrove replanting, recovery of oyster grounds) has been recognized by finance ministers at the 2019 G20 (UN Secretary General, 2019), scientists (Reguero, et. al., 2018; Narayan, et. al, 2016) and practitioners as being inherently more cost effective than hard infrastructure to deal with the impacts of climate change. Consequently, interest is growing in the protective role that coastal ecosystem restoration (or green infrastructure), such as reefs and wetlands, can play in adapting to the anticipated consequences of climate change in coastal areas.

However, a lack of quantitative information on their relative costs and benefits is one principal factor limiting their use more broadly. Yet, some available data has shown that for example, nature-based solutions are as much as an order of magnitude cheaper than hard infrastructure to address flooding issues in the Gulf of Mexico (Reguero, et. al, 2018). Specifically, for coastal areas, available data (Constanza, et. al., 2008) has concluded that coastal wetlands function as valuable, self-maintaining "horizontal levees" for storm protection, and also provide a host of other ecosystem services that vertical levees do not, Including carbon sequestration and groundwater recharge.

Around the world, where data is more readily available and analyses have been conducted, solutions that are based in ecosystem enhancement clearly show to be more cost-effective as well (Galve., et al. 2016; Salminen, et al. 2013; Bakker, 2017). In particular, there has been an examination of the sustainability, cost-effectiveness and soundness to ecology from flood protection by ecosystem creation and restoration to the point that it has been argued that these solutions should be implemented globally and on a large scale (Temmerman et al., 2013). Their restoration and preservation represent an extremely cost-effective strategy in face of extreme weather events. In the table 4 below, a comparison is included, based on available data, of the anticipated cost effectiveness of some restoration options to be financed under the programme.

Table 5. Cost effectiveness of restoration options vis a vis hard infrastructure to address the consequences of intensification of extreme weather events in coastal zones.

Impact addressed	**Cost of Hard Infrastructure**	**Cost of Restoration Alternative**	**Reference**
Sea level rise	US$48 Million/mile for Dikes	US$25 Million/mile for wetland restoration	Reguero, et. al., 2018
Landslides Mudslides	US$0.6 Million/ha for hardened embankments	US$1000-5000/ ha for reforestation	Geographycat, 2018 for hardened embankments; Vergara, et. al, 2015 for reforestation
Salt intrusion	Use of dikes (US$48 Million/mile)	US$1000/ha for mangrove restoration	Narayan, et. al., 2016
Flooding	Use of dikes (US$48 Million/mile)	US$1000-5000/ha for reforestation	
Landslides	Rebuild terrace system [0.6 to 1 MEuro/ha]	Reforesting abandoned terraces 6000 Euro/ha	Galve, et al. 2016
Flood Management	Manmade infrastructure (€112,000 per 100 meters)	Wetland restoration (€62,000 per hectare)	Salminen, et al. 2013
River overflow	Rock armor US$100,000 per ha	Restoration of riparian canopy (up to US$2000/ha)	GeoCal, 2010

Coastal Protection	Double and single concrete pile breakwater, respectively [1,000 US/m to 3,500 US/m each 25 years]	Melaleuca fence [50 US/m to 80 US/m each 5 years]	Bakker, 2017

The data above illustrates the cost effectiveness of the proposed approaches - Nature-based solutions vs. traditional hard infrastructure – in tackling the consequences of flooding, landslides, river overflows, salt intrusion and others. In addition, the costs of bringing hard-building materials (concrete, cement, other supplies) into the project area was found to be prohibitive given the relative isolation of the project sites, difficult terrain and possible need of expertise not available locally. On the contrary, the collection of local seedlings, construction of wood-based nurseries, and planting processes, all rely on local labor and materials. Ex-ante, there was no need to conduct a feasibility study to assess cost-effectiveness. Once final designs and locations are confirmed, it will pertinent to confirm the level of cost-effectiveness compared with the traditional cost of hard-engineering options.

Additionally relevant literature shows that “Effective long-term participation of communities in disaster risk reduction measures in landslide-prone areas continues to be a challenge. This study aims to evaluate the extent to which community-based soil-bioengineering techniques allow for effective mitigation of shallow landslide events given technical, environmental, economic and socio-cultural sustainability criteria. In 2018, an assessment of 73 sites established between 2010 and 2014 showed that (1) 83% of the sites were adequately maintained and (2) 69% of the sites fulfilled the function of soil stabilization. A cost–benefit analysis was conducted for two sites and indicated a cost–benefit ratio of 4.5 and 6 respectively” (Hostettler, et al. (2019)).

E. Consistency with regional and national strategies

Describe how the programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

If applicable, please refer to relevant regional plans and strategies where they exist.

Development strategies alignment. The three target countries are part of a regional strategy for the conservation and sustainable use of biodiversity in Mesoamerica as well as a Regional Strategy for Rural Development[33]. These are complemented by a Regional Climate Change Strategy (CCAD 2010a) and a Regional Strategy for the Integrated Management of Water Resources (CCAD 2010b). Also, Central America has also adopted a Regional Strategic Program for the Management of Forest Ecosystems, which calls for sustainable use, ~~conservation~~conservation, and restoration of forest resources (Programa Estratégico Regional para el Manejo de los Ecosistemas Forestales - Perfor (CCAD y CAC, 2014)). All three countries have pledged to develop national restoration strategies and adhere to goals set under Initiative 20x20, the Bonn Challenge and seek to contribute to restoration activities during the U.N. Decade on Ecosystem Restoration.

Guatemala

The project supports the implementation of ~~the National Forest Landscape Restoration Strategy, the National Strategy on Biological Diversity (Objective 11) and the Action Plan 2012-2022 from the National Council of Protected Areas (CONAP). Additionally, it contributes to the National Strategy for the Reduction of the Deforestation and the goals of the National Development Plan K'atun 2032.~~ :

- Law on Climate Change, enacted on September 9th, 2013, stresses the need for an action plan for adaptation and mitigation in the face of climate change, expressly stating that one of the adaptive measures or actions should be implementing financial tools to help comply with adaptive actions or biodiversity conservation.
- Nationally Determined Contribution to the Mitigation of Climate Change (NDC) before the UNFCCC: The Government of Guatemala promotes and proposes reduction of vulnerability and improvement of adaptation processes all across key sectors. As regards agriculture and food security, priority is given to those actions with a direct effect in food production, mainly for self-consumption and subsistence in top priority areas.
- National Forest Landscape Restoration Strategy,
- Action Plan 2012-2022 from the National Council of Protected Areas (CONAP)
- National Strategy for the Reduction of the Deforestation,
- Integrated Coastal Area Management Plan of Guatemala, which contemplates the climate change variable.
- National Strategy for Biological Diversity (2012-2022): promotes the integration of biological diversity in the adaptation of climate change.
- 2032 K'atun National Development Plan: one of the main development focus of the plan is 'Natural Resources today and onwards', that proposes that sustainable development cannot be thought of without appropriate environment and natural resources management.

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[33] Estrategia Regional para la Conservación y Uso Sostenible de la Biodiversidad en Mesoamérica (CCAD 2003) and Estrategia Centroamericana de Desarrollo Rural Territorial - ECADERT (CAC, 2010)

In Guatemala, in less than a decade, there have been significant negative effects of high intensity hydrometeorological events, such as: Hurricane Mitch in 1998, the drought of 2001 and in 2005, the ravages of tropical storm Stan. There is evidence of a greater recurrence of extreme events than those reported in the past. Although Guatemala contributes little to the global emission of greenhouse gases, we receive negative impacts that affect us with greater intensity and frequency. The scope of the National Climate Change Policy includes the reduction of the country's vulnerability to extreme events, the strengthening of adaptive capacity and the contribution to the reduction of greenhouse gas emissions, as well as the use of carbon markets[34].

In recent years, Guatemala has been more intensely affected by extreme events. Among these events are severe and prolonged heat waves, the delay in the establishment of the rainy season, and the increase in the number of days with intense rainfall [35]. Extreme rainfall events generally result in flooding and inundation. In Guatemala, there have been floods associated with the passage of tropical waves from the east and convective events (intense rains in flat areas, i.e., not caused by orographic effects), such is the case of floods in the Petén area, lower Alta Verapaz, northern Quiché and Izabal, in the months of November to March (INSIVUMEH, 2015b, cited by SGCCC (2019). in the case of rainfall and storms, Pacay (2015), cited by SGCCC (2019) conducted a study of extreme daily rainfall events in Guatemala using a database of 103 stations of pluviometric records during the period from 1970 to 2014. He determined that between 26 and 28 % of the extreme rainfall events recorded are associated with tropical cyclones and the rest (between 72 and 74 %) are of non-cyclonic origin; but the highest historical values were of cyclonic origin.

According to the National Action Plan on Climate Change (PANCC[36]), the levels of general poverty and extreme poverty, the lack of land use planning, deforestation, soil loss and degradation, levels of environmental contamination, population growth, malnutrition and food insecurity, and the concentration of inhabitants around cities in high-risk areas are factors that increase the country's vulnerability. This socioeconomic fragility contributes to make the impacts of extreme events even more devastating. Likewise, in the case of extreme events, one of the PANCC objectives refers to "Protect agricultural production from the effects of forest fires, the spread of pests and diseases, landslides and floods, and other events related to climate variability and soil degradation. In addition, it is expected that climate change and variability will generate changes in rainfall patterns (alterations in the frequency, increase and intensity of rainfall); an increase in frosts (cold fronts); droughts and extreme events such as tropical cyclones and tropical storms or depressions that will impact the health and property of the country's and the State's inhabitants.

Floods are among the most costly and destructive disasters caused by extreme events, and are one of the main threats to the country's infrastructure[37]. With regard to extreme events related

[34] Ministerio de Ambiente y Recursos Naturales. 2009. Política Nacional de Cambio Climático (Acuerdo Gubernativo 329-2009).

[35] Sistema Guatemalteco de Ciencias del Cambio Climático (SGCCC). (2019). Primer reporte de evaluación del conocimiento sobre cambio climático en Guatemala. Castellanos, E.; Paiz-Estévez, A.; Escribá, J.; Rosales-Alconero, M. y Santizo, A. (eds). Ciudad de Guatemala: Editorial Universitaria UVG. https:// doi.org/ISBN.

[36] Guatemala. Consejo Nacional de Cambio Climático. Plan de acción nacional de cambio climático. En cumplimiento del Decreto 7-2013 del Congreso de la Republica. Guatemala: Segeplan, 2016

[37] MARN, SGCCC, & PNUD. (2021). Tercera comunicación nacional sobre cambio climático de Guatemala. Editorial Universitaria UVG. https://www.marn.gob. gt/paginas/Dirección de Cambio Climático

to temperature, Guatemala has experienced heat waves, frosts and cold waves. Heat waves usually occur from March to May and are more recurrent in the departments of Zacapa, Jalapa, Chiquimula, El Progreso, Jutiapa, Izabal and Petén (Eastern Valleys, Caribbean and Northern regions).

The Caribbean slope of Guatemala represents 31% of the national territory and is made up of rivers of long lengths and gentler slopes. In the mountainous part of the country, the rivers become sinuous as they flow through large ravines and canyons. It is made up of 10 basins: Grande de Zacapa, Motagua, Izabal-Río Dulce, Polochic, Cahabón, Sastún, Mopán-Belice, Hondo, Moho and Temans (see table below).

In relation to the North - Atlantic zone (Petén, Alta Verapaz, Izabal), according to CONRED (2016), the departments with the highest landslide threat are: Huehuetenango (1 110 identified sites), San Marcos (642), Guatemala (616), Quiché (590) and Alta Verapaz (405 identified sites). The most determining factor in these departments is topographic conditions. In turn, the departments with the highest risk of flooding are: Escuintla (1037 sites), Izabal (623), Petén (591), Santa Rosa (383) and Suchitepéquez (360). In these departments, the plains are conducive to river overflows (CONRED, 2016).

There are two initiatives in process: a) Project "Building research-action networks for territorial development and adaptation to climate change in Guatemala", implemented by the Universidad Rafael Landívar - Instituto de Investigación y Proyección sobre Ambiente Natural y Sociedad (Iarna), - Sida, with the objective of contributing to the improvement of the living conditions of the population living in poverty in the country, promoting interventions at different levels and scales that contribute to guarantee food security, improve livelihoods and increase capacities to adapt to climate change. The project will be implemented in three territories: Jutiapa: municipalities of Comapa, El Progreso, Jutiapa and Quesada, which are part of the dry corridor. Zacapa: municipalities of Cabañas, Huité, La Unión and Zacapa. Guatemala: municipalities of San Pedro Ayampuc, Chinautla, Chuarrancho, San Raymundo, San Juan Sacatepéquez and San José del Golfo. The project is organized into three interrelated components: (i) the first seeks to increase the response capacity of households to face the foreseeable effects of climate change, (ii) the second will contribute to strengthen community and inclusive social organization, as a strategy for adaptation to this phenomenon, and (iii) the third seeks to improve the management of natural goods and services in a context of climate uncertainty and risk. b) Risk and Disaster Management Program, implemented by the Private Institute for Climate Change Research, through this program, influences disaster risk reduction by promoting actions based on the analysis of natural and social factors. It also identifies the main climatic hazards in the area. This program seeks to contribute to the understanding of potential risks and to monitor them over time. In the social sphere, the program conducts various vulnerability analyses of populations, their infrastructure and production systems, to identify weak points and prioritize actions to reduce risks.

Honduras

The project supports~~: the~~

- National Strategy for Productive Landscapes;
- ~~the~~ Country Vision Plan for 2038 (Goal 3.6 on sustainable use of natural resources to reduce environmental vulnerability); ~~the~~
- National Plan 2010-2022;
- ~~the~~ National Plan for a Better Life;
- ~~the~~ National Law for Climate Change, ~~the~~
- National Strategy for Climate Change,

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- ~~and the National Adaptation Plan.~~Law and Action Plan for Adaptation to Climate Change: The Republic of Honduras deems adaptation to climate change a top priority to reduce the country's vulnerability.
- Nationally Determined Contribution to the Mitigation of Climate Change (NDC) before the UNFCCC: The agri-food sector has prioritized adaptation measures such as the implantation of "Quesungual" agro-forestry systems, which promotes less use of fertilizers; the use of slow-absorption organic fertilizers; changes in the calendar of crops; incentives to produce introduced seeds adapted to local conditions; introduction of insect-repealing plants in consolidated crops; modification or abatement of inappropriate agricultural burning practices; measures to fight erosion; projects of low volume irrigation in slope agriculture practice; practices of biological control of pests and diseases; development of organic fertilization systems; and promotion of incentives for organic agricultural production, including tax and financial incentives.
- Law of Agro-forestry for Rural Development: pending approval, it articulates the public policy in several paramount focuses oriented to a low-carbon development resistant to the effects of climate change promoting adaptation and bringing co-benefits to the population.
- Biodiversity National Strategy and action Plan 2010-2022, and Aichi goals: in their diagnosis, the impact of Climate Change on biodiversity is the most important of the factors.

This project is aligned with various national laws and long-term strategic plans that incorporate the issue of adaptation to climate change, as established in Objective 3 of the National Plan and the country's vision[38], as well as the National Climate Agenda and the Biodiversity Policy, Honduras recently signed two international agreements promoted by the United Kingdom, such as the Alliance for the Oceans and the Alliance for the Forests, which incorporates the adaptation actions of the population in this area, and is also aligned with the national policy of Integrated Risk Management, which incorporates the municipal plans for Integrated Risk Management.

At the local level, it is aligned with the Municipal Development Plans with a focus on Land Management PDMOT of the municipalities of Puerto Cortes and Omoa, which are valid until 2030. It is also aligned with the strategy derived from the binational roundtable for the management of the Motagua River basin due to the problems that have been generated by the discharge of solid waste at a rate of 3,000 tons per day along the 425 km of the basin, which discharges directly into Omoa Bay. This basin has one of its watersheds in the Merendón mountain range, which extends 127 km between Guatemala and Honduras, with most of it in Honduras (72 km long)[39].

Within the Cordillera there are two declared protected areas, the Cusuco National Park and the Merendón Reserve, the area that produces part of the water for human consumption in the city of San Pedro Sula, where CASM will be developing its Protegiendo el Merendón project. The main action of the Project will be to attend the northern side of the mountain range that borders the sea, where 15 rivers and 50 streams flow, which have the function of supplying water, but at the same time are the main threat due to climatic phenomena that expose the entire population of the municipality to the risk of floods and landslides, leaving the entire population of the 20 settlements located along the 64 km that form part of the coastal marine territory incommunicado, even causing displacement and migration of its inhabitants during extreme events[40].

The project proposes forest restoration in the priority basins of the rivers that are causing the greatest flooding problems identified in the Municipal Comprehensive Assessment, such as the

[38] Congreso Nacional de la Republica de Honduras, 2009, Decreto 286-2009 Plan de Nación y Visión de País 2009- 2038. Tegucigalpa, Honduras.

[39] PNUD. 2019, Proyecto PRORIO, Proyecto Elaboración la estrategia de Gestión Integral del rio Motagua

[40] Municipalidad de Omoa, 2011, Diagnostico Integral Municipal. Omoa, Cortes. 89p.

Cuyamel, Tulian, Chivana, Chiquito and Muchilena river basins, in order to reduce discharges through nature-based solutions, increasing the water retention capacity with the increase of the forest cover that for its sustainability will be coordinated with the AHPROCACAO Honduran Association of Cocoa Producers and its affiliates in the area, who apply technology adapted to cocoa production developed by CATIE and distributed by FHIA, also there are adequate spaces for the installation of forest nurseries that will accelerate the climate action with the support of the project.

At the level of local collaboration there is a social fabric officially organized by the municipality, among which are boards of trustees, water boards, associations of artisanal fishermen, women's groups, Afro-descendant organizations, agricultural producers associated in various organizations, the important thing is that they have experience working in an organized manner. There is also a solid and well respected local organization called Cuerpos de Conservación de Omoa that has a long history of research on marine issues that they have been doing since 2006, lately focused on finding solutions to the enormous problem of solid waste that comes during the rainy season from Guatemala, which is generating serious problems for the population, especially on food security because it is damaging the marine fauna by the contamination of micro plastics, and also directly affects the local economy by damaging the physical image of the beaches that scares away tourism and income of the locality. And in direct consultation with Mayor Ricardo Alvarado 2021 who has been denouncing the damages to the city and to the income because the funds that should be dedicated to local development are applied to save lives and to build infrastructure adapted to attend the affected population[41].

Belize

The project is consistent with key national and sectoral policies, strategies and action plans to incorporate climate change to enhance Belize's resilience. Priority actions are outlined in the National Climate Change Policy, Strategy and Action Plan (2015-2020)[42]. The project will contribute to address Belize's information gap on the role of best land-use practices and enabling investments in restoration.

At a local level the project is fully aligned with the Monkey River Watershed Association (MRWA) "Roadmap for Restoration of Monkey River, its Watershed, and its Shore", recently released (2019), detailing the causes of river degradation and beach erosion, proposing restoration goals, and providing a "roadmap" to recovery (MRWA and Nilcia Xi, 2019).
The plan calls for installing shoreline stabilization barriers, planting fast growing trees, some river mouth dredging and beach nourishing, riparian forest restoration, re-designing banana drainage systems, stabilizing steep banks, reducing deforestation and reforesting degraded areas including the headwaters, eliminating river gravel mining, and setting up a monitoring program. A pilot project supported by the UNDP recently demonstrated the efficacy of sand filled "geotubes"—installed by community members—for restoring beach extent and protecting threatened properties. The "Roadmap for Restoration of Monkey River, its Watershed, and its Shore" initiative was supported by the Belize Foundation for Research and Environmental Education, the United Nations Development Programme, Fyffes Inc., Belize Hydrology Department, Toledo Institute for Development of Environment, Southern Environmental Association, Ya'axche

[41] Interview with Municipal Mayor of Omoa, Don Ricardo Alvarado.

[42] The action plan calls for, inter alia, the reviewing of national strategies and regulations, designing monitoring and evaluation frameworks, improving mangrove and habitat conservation and management, institutional strengthening, integrated water resource management through restoration and the undertaking of comprehensive assessments on human settlements and infrastructure. More specific climate change adaptation needs in the sectorial plans include the need to educate different stakeholder groups about climate change adaptation measures and to help them develop capacity to research, develop and implement adaptation strategies.

Conservation Trust, and US Geological Survey, indicating the extent of involvement and cooperation among organizational stakeholders.

The coastal area is rich in wetlands, many of which have been seriously impacted and degraded by shrimp facilities primarily, with development and road construction also being issues. Wetlands ranging from freshwater to brackish to marine are vital landscape features that add resilience to impacts of floods, droughts, and hurricanes. These vital ecological units must also be included in management strategies and recognized for their ecological contributions (absorbing floodwaters, holding freshwater on the landscape longer, recharging aquifers, buffering against storm surge, carbon sequestration, productivity, biodiversity conservation).

There are many opportunities to involve women, children, and men in reforestation efforts, including riparian and upland restoration. Red Bank, San Pablo, and Bladen Village all have large Indigenous populations, some having been involved in restoration in the past and can be engaged in upcoming efforts. Women are often the ones interacting most intensely with the river and should be targeted with educational outreach and engaged in monitoring efforts. A lot of the microbial monitoring conducted by Esselman, et al. (2018) completed by a trained Maya woman from San Antonio.

Articulation with Management Plans of Protected Areas. The proposed project activities are consistent with the management plans for Cerro San Gil and for the Cususco national Parks. In Cerro San Gil, the Management Plan of the Park emphasizes inter alia, provision of technical assistance on forest management to the inhabitants of the Reserve (plans for management, training in sustainable forest use, among others. It also establishes a goal of 450 ha of reforestation). The restoration program in Cerro San Gil is supportive and complementary of these objectives. The Management Plan also assigns priority to access economic incentives for conservation and forest management including on 50 hectares of reforestation with native species, and 2,000 hectares of protection. Activities under component 2 are in direct support of these priorities and will be articulated with the Park management during project implementation. In Cusuco, the management plan establishes conservation of the representative endemic ecosystems of the area and proposes the maintenance of critical services, including water supply, tourism and biodiversity conservation. The activities under component 2 are also in direct support of these priorities and will be articulated with the Park management during project implementation.

Table. Compliance with relevant plans and strategies

Strategies	Belize	Honduras	Guatemala
Regional Platforms			
Regional Environmental Strategy Framework[43]. Regional strategy that includes Climate Change and Risk Management that awards priority to adaptation to the consequences of climate change	Signatory. Project will follow/ take into account its guidelines and commitments	Signatory. Project will follow/ take into account its guidelines and commitments	Signatory. Project will follow/ take into account its guidelines and commitments

[43] CCAD, 2014 : Available at: http://www.sica.int/ownload/?96568

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Regional Strategic Program for Forest Ecosystems Management[44] that supports sustainable management of forest promoting as well regional cooperation	Signatory. Project will follow/ take into account its guidelines and commitments	Signatory . Project will follow/ take into account its guidelines and commitments	Signatory . Project will follow/ take into account its guidelines and commitments
The Regional Strategy for Sustainable and Climate-adapted Agriculture for the SICA region (2017) sets out priorities for the agricultural sector in terms of climate change adaptation, sustainable livelihoods and the development of sustainable, low-carbon agricultural landscapes. The Central American Strategy for Rural Development (2010–2030) seeks to build the capacity of rural communities, government institutions and CSOs to promote innovative and inclusive rural development mechanisms.	Signatory. Project will follow/ take into account its guidelines and commitments	Signatory. Project will follow/ take into account its guidelines and commitments	Signatory. Project will follow/ take into account its guidelines and commitments
NDC (Communications to the Paris Agreement)	The updated version (2021) benefits from the availability of more robust data on land use trends and emission factors over the previous version of the NDC, including the availability of Belize's first Forestry and Other Land Use (FOLU) sector Greenhouse Gas Inventory showing long-term trends in emissions and removals since 2001. It also carefully considers national capacity and circumstances as well as the availability of technological advancements. projections in the FOLU sector which have been used by Belize in the selection of	The updated NDC (2020) prioritized adaptation measures such as the implantation of "Quesungual" agro-forestry systems, which promotes less use of fertilizers; incentives to produce introduced seeds adapted to local conditions; modification or abatement of inappropriate agricultural burning practices; measures to fight erosion; projects of low volume irrigation in slope agriculture practice; practices of biological control of pests and diseases; development of organic fertilization systems; and promotion of incentives for organic agricultural production,	In 2020, Guatemala initiated the NDC updating process. Thus far, the country has drafted adaptation and mitigation targets that are linked to national priorities and plans—and that comply with the national and sectoral regulatory framework on climate change. The updated NDC integrates cross-cutting issues, such as gender and inclusion of indigenous peoples. Guatemala's NDC includes a pledge to restore 1 million ha, also pledged under Initiative 20x20. The project contributes to restoration goals and meets the guidelines established in the NDC.

[44] CCADD, 2014. Available at: http://www.sica.int/download/?96569

	the site and identification of adaptation measures included in the project. The project will contribute to actions in the forestry sector. The project contributes to restoration goals and meets the guidelines established in the NDC.	including tax and financial incentives. In forestry management it includes the goal of 1 million ha under restoration, also pledged under Initiative 20x20. The project contributes to restoration goals. The project contributes to restoration goals and meets the guidelines established in the NDC.	
NAPs (National Adaptation Plans of Action)	Belizes's NAP recognizes its vulnerability to cyclical hurricane damage, tidal wave, floods and wind damage, which have affected agriculture, property and infrastructure, and devastated the economy. A rise in sea level threatens potential consequences such as coastal erosion and land loss, flooding, soil salinization, and intrusion of saltwater into groundwater aquifers. In 2009, the Government of Belize adopted a National Integrated Water Management Policy and a National Adaptation Strategy to address climate change in the water sector. The strategy provides a solid foundation for mainstreaming climate change into the sector. The project complies with the priority of action on riparian and coastal areas and focuses on Belize's priority for restoration in the Monkey River Delta.	Honduras has initiated its NAP with the support of the Project "Addressing Climate Risks in Water Resources in Honduras" funded by the Adaptation Fund through technical assistance and stakeholder engagement workshops to prepare an initial road map for the NAP process. The DNCC stablished a technical workgroup to follow up the process and engage civil society, government institutions. The NAP preparation process has established 5 strategic pillars, including in food and in ecosystem services. The project will be in constant communication on the Ministry on advances on the NAP process aiming to be fully in compliance and in support.	Guatemala has completed its amended NAP (2018), which includes a comprehensive assessment of priority actions and strategies. The NAP recognizes as a key sector, Forestry, Coastal Zone Management and Ecosystem Services. Specifically, it calls for action in the forestry sector, supporting restoration opportunities (including achievement of 34% of forest cover by 2030), in support of the ecosystem services forests provide. It also targets the sustainable management and recovery of protected areas. The project complies with the priority of action on forest areas and sustainability of protected areas, focusing in Cerro San Gil and Rio Dulce areas.
Climate Change National Law	A climate change law is under discussion. The project will be in constant communication on the Ministry on	Law and Action Plan for Adaptation to Climate Change (2013) identifies adaptation to climate change a top priority to	Law on Climate Change, was enacted in 2013; it stresses the need for an action plan for adaptation and mitigation in the face of climate change, expressly

	advances on the Climate Law process aiming to be fully in compliance and in support.	reduce the country's vulnerability. The project is in support of the priority established in that it deploys resources on adaptive measures in the coastal area of the Gulf of Honduras.	stating that one of the adaptive measures or actions should be implementing financial tools to help comply with adaptive actions or biodiversity conservation. The project is in support of the goals established in that it deploys resources on adaptive measures in the coastal area of the Gulf of Honduras.

F. Technical standards

Describe how the programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

This is a reforestation and restoration project. The project complies with forest regulations in the three countries and contributes to strategic environmental goals. See table 6. The project will not result in any permanent infrastructure and thus is not affected by building codes. Restoration pilots will be implemented on the basis of germplasm supplies and local labor standards.

Table 6. Compliance with relevant technical standards and standards for environmental assessment.

Standard	Belize	Guatemala	Honduras
Forest code	Project is compliant with the Forest Act Ch 213 in that it will not establish rights on intervened forest reserves and protected areas and will result in no extraction of forest products.	The Forest Law decree 101-96 is the main regulation that governs forests in the country. In Guatemala, the administration of national forest is in charge of the National Forest Institute (INAB) for area outside protected zones, and The Protected Areas Council CONAP for forest in protected areas. Both INAB and CONAP Have regional offices in the project area. The project will not infringe on the integrity of forests in the project area.	**Forest Law** created in 2008 regulates **forestry** activities. The **Forest Law** distinguishes among three different types of managed **forest** areas: private plantations, community **forest** management, and public protected areas. The project will not result in logging or extraction of forest products from protected areas.
Environmental Assessment	The project is in compliance with the Environmental Protection Act, Ch 328 in that it will not cause adverse impacts from the project interventions (restoration of canopy in forest reserves, regeneration of mangroves)	Guatemala's Constitution, which is the basis of all legislation, provides for the preservation of the **environment** and natural resources through the establishment of national parks and reserves and the regulated exploitation of plant and animal life, land and water (Articles 64 and 97). The project will help restore integrity of the intervened reserves and its activities will not result in illegal exploitation of resources	The general environmental law (Decree 104-93) has as objective the protection, conservation, restoration and management of the environment and of natural resources in Honduras. The project is in compliance with the provisions of the law in that it will not result in adverse impacts on natural resources.
~~**Goals under**~~	~~The project supports the goal of Belize under Initiative 20x20 and the~~	~~Guatemala has an established goal of 1.2 M ha of restored land under~~	~~Honduras has an established goal of 1.0 M ha of restored land under~~

Initiative 20x20	Bonn Challenge in that it will result in restored and reforested areas. Belize has no restoration goal established but is working on prioritizing areas.	Initiative 20x20 and the Bonn Challenge. The project will contribute to this goal and the U.N. decade on Ecosystem Restoration	Initiative 20x20 and the Bonn Challenge. The project will contribute to this goal and the U.N. decade on Ecosystem Restoration

The project has been designed and implementation will be in compliance with strict environmental and social policies and adherence to the relevant policies of the Adaptation Fund.

Access and equity. All activities supported by the project are designed on the basis of fair and equitable access to benefits. The pilots will take place in areas with predominant minority populations, have been identified and will be implemented with full participation of, and informing the local communities and focusing both on the adaptation value as well as the benefits on livelihoods.

Marginalized and vulnerable groups. Most project activities take place along the Atlantic Coast of the participating countries in areas that are home to ethnic minorities, subsistence farmers, artisanal fishing communities and impoverished settlements. The benefits from the restoration activities will accrue in great part to these communities by increasing the resilience of their surroundings to the consequences of the intensification of extreme weather events. The community consultation processes identified these groups and shared information and received their suggestions on the scope of activities. Most activities will provide a focus on the participation of minority groups.

Gender Equity and Women Empowerment. Capacity building activities are being designed and will be implemented in a manner that will allow for gender conscious social engagement. Most activities will provide a focus on the participation of women.

Indigenous peoples. Project activities have been designed and will be implemented, taking into account the special information and participation needs of indigenous peoples in the project areas as per the findings of the community consultation.

Protection of natural habitats. The project activities will restore and strengthen natural habitats through reforestation and restoration activities. Specifically, degraded areas will be restored inside the Cerro San Gil reserve in Guatemala, the Sierra del Merendon protected area in Honduras and along protected riparian areas and in protected coastal mangroves in Belize and Honduras.

Conservation of biological diversity. The restoration activities will result in biodiversity gains as gains in vegetation cover and restoration of habitats will protect biodiversity assets and gains in population of local species.

Climate change. The project is designed as an adaptation measure to the consequences of climate change, specifically, the intensification of extreme weather events in the most affected coastal areas in the region. The rationale and activities, as well as outputs are all designed around the issue.

Health safety. All future activities will be affected by concerns and impacts from the global health emergency. Countries participating in the program are not exempted from the consequences of the COVID-19 epidemic. As of late spring of this year, and according to WHO reports, Belize, Guatemala and Honduras have managed a relatively low rate of infection with limited fatalities.

~~There are no widely available reports on the incidence along the coastal area. However, the rural nature of the interventions and the low population density in the target area may further facilitate implementation and ease concerns. Most field work will be undertaken through local labor; there will be no use of outside workers in the areas under restoration, reducing the potential for import of infection cases. In any event, the activities and pilots will be conducted in a manner consistent with WHO and country guidelines and any additional applicable recommendations.~~

G. Project duplication

Describe if there is duplication of the programme with other funding sources, if any.

Some projects in surrounding areas of the Water Basin selected or with national focus have been identified in the consultations, however there is no duplication with other funding sources due to this is a first of a kind operation targeting the consequences of intensification of extreme weather events on the Atlantic Coast of the participating countries taking into account; restoration as a solution of climate and climate drivers, aligned with capacity building on community and associative schemes adding value through climate information community management and a Regional approach to leverage policy and economic changes in the most vulnerable regions of the Hurricane Corridor.

Belize

A significant amount of research has been conducted within Monkey River Village, the surrounding area, and the watershed. A social survey by a group from Pennsylvania State University working in conjunction with TIDE and UB NRMP surveyed villagers to get their input and concerns about the impact of development decisions made by outsiders that affected their lives (Higdon, et al., 2005). An assessment of agriculture around Monkey River Village and its effects on the community, part of the Higdon, et al. (2005) study, surveyed stakeholders (villagers, large and small-scale farmers) to record their concerns and to identify integrated pest management strategies in use (Steed and Dean, 2005). The major concern expressed by villagers was the effects large farms imposed on the local environment.

Ecological studies have also been conducted. Esselman, et al. (2006) described variation in fish assemblages within Monkey River from upstream to downstream. Esselman and Buck (2007) conducted a hydrological assessment and human impact map of Monkey River. Winemiller, et al. (2011) reported on the food web structure and impacts from watershed activities along the fluvial gradient of Monkey River. Karlsson and Hovelsrud (2015) published their observations of local collective action in Monkey River Village as an adaptation to coastal erosion. Esselman, et al. (2018) conducted an assessment of microbial contamination threatening several Maya communities within the Monkey River Watershed.

Monkey River Watershed Association (MRWA) was formed in 2017 by watershed stakeholders and supporting environmental organizations to address impacts threatening the watershed and connected coast. Belize Foundation for Research and Environmental Education (BFREE) has been a steadfast partner to MRWA through the years and played the largest role of any NGO in MRWA's formation. As an organization headquartered in the headwaters of the Monkey River, they are geographically well-positioned to contribute. “A Roadmap for Restoration of Monkey River, its Watershed, and its Shore” was recently released, detailing the causes of river degradation and beach erosion, proposing restoration goals, and providing a “roadmap” to recovery (MRWA and Nilcia Xi, 2019). The roadmap contains recommendations for beach stabilization, building up the village land height compacted by a 2009 earthquake, restore wet and dry season flow patterns, leave sand in the riverbed to restore lost beach sand, and reduce amounts of fine particulate material entering the river channel.

Table. Relevant Project initiatives in Belize.

PROJECT INITIATIVE	OBJECTIVE	IMPLEMENTING AGENCY
Climate Smart Agriculture Technology and Systems for Risk Management	The main objective of this consultancy is to design and establish an Extension training curriculum and training manual/guide on Climate Smart Agriculture (CSA) and DRM in order to build capacity within the extension services and lead farmers for increased resiliency to climate change in the agriculture sector of Belize	Ministry of Fishery, Forestry, the Environment and Sustainable Development, United Nations Development Program (UNDP) Tropical Agricultural Research and Higher Education Center (CATI
National Agroforestry Policy Development for Belize	To develop an Integrated and Comprehensive Agroforestry Policy Framework for Belize aimed at analyzing the status of agroforestry practices, along with forest and environmental policies that may contribute to enhance tree coverage in farms to increase carbon sequestration – to meet Belize´s obligations under the Paris Agreement – and enhance the resilience to climate change.	Ministry of Fishery, Forestry, the Environment and Sustainable Development, through the National Climate Change Office. The Climate Technology Centre and Network (CTCN). Tropical Agricultural Research and Higher Education Center (CATIE)
Training of trainer program focused on the Climate Smart Agriculture (CSA)	To implement a training of trainer program focused on the Climate Smart Agriculture (CSA) approach. The training aims at increasing resiliency to climate change (CC) in Belize's agriculture sector. The targeted audience is Extension Officers from the RRB Program, the Ministry of Agriculture, and staff from other relevant agricultural institutions.	Green Climate Fund IFAD. The "Resilient Rural Belize (RRB) Tropical Agricultural Research and Higher Education Center (CATIE)
Improving Livestock Productivity and Climate Resilience in Belize.	Promotes the adop- tion of climate-smart livestock production technologies, such as the rehabilitation of de- graded pastures, the enhancement of tree coverage, and other silvopastoral innovations aimed at increasing productivity, income, and resilience to climate change in livestock farms.	Belize Livestock Producers Association (BLPA) CATIE InterAmerican Development Bank (IDB) Innovation Laboratory
Consultancy for Services to Review and Update the National Integrated Water Resources Management Policy, Strategy and Action Plant of Belize	The project aims to strengthen the integrated management if water resources in Belize, through the design of policies and instruments for water planning in Belize River and New River Watershed, under the ridge to reef approach	Proyecto Manejo Integrado de la cuenca a la arrecife de la ecorregión del arrecife mesoamericano (MAR2R) Protected Areas Conservation Trust (PACT) Department of the Environment- Ministry of Sustainable Development, Climate Change & Disaster Risk Management
Belize Marine Conservation & Climate Adaptation Project in coastal areas of Belize	A 5 year project designed to implement a priority ecosystem-based marine conservation and climate adaptation measures to strengthen the climate resilience of the Belize Barrier Reef System and its productive marine resources	Ministry of Sustainable Development, Climate Change & Disaster Risk Management The World Bank The Nature Conservancy

The Nature Conservancy Blue Bond in the Americas	Belize has committed to protecting at least 30% (10, 113 square kilometers) of its ocean areas, coral reef, seagrass beds, mangroves and marine habitat.	Government of Belize The Nature Conservancy
Environmental Education and Water Quality Monitoring and Business Plan for the Billy Barquedier National Park	To implement key components of the Billy Barquedier National Park (BBNP) Management Plan including environmental education, water and biodiversity monitoring and development of a business plan to address sustainability	PACT
Consultancy for Development of a Sustainable Forest Management Plan for the Freshwater Creek Forest Reserve		Government of Belize- Ministry of Sustainable Development, Climate Change & Disaster Risk Management World Bank
Smart Coast Project	Modelled Scenarios and adaptation measures and management plan for LBCNP	Southern Environmental Association The Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU)-Germany
REDD + Readiness Project Belize	An effort to reduce carbon emissions and increase carbon stock in the forestry sector. It is a forest-based climate change mitigation framework which provides potential economic benefit for developing countries.	National Climate Change Office- Ministry of Sustainable Development, Climate Change & Disaster Risk Management

Honduras

Table 7. Relevant Project initiatives in Honduras.

PROJECT INITIATIVE	OBJECTIVE	IMPLEMENTING AGENCY
Let's Save the Merendon	The project aims to introduce adaptation practices to strengthen resilience of communities living in the Sierra del Merendon. This will be done through the four components below: Component 1: Effective and efficient management of natural resources. Component 2: Sustainable Agroecological and Forestry Practices. Component 3: Inclusive and multisectoral governance. Component 4: Knowledge Management and Technological Innovation.	Comisión de Acción Social Menonita (CASM)
Ecosystem-Based Adaptation at Communities of the Central Forest Corridor in Tegucigalpa	This project's main objective is to increase climate resilience of the most vulnerable communities in the Central Forest Corridor (CBC, in Spanish) , as well as the adaptative capacity of its municipalities, with an emphasis in	United Nations Development Program (UNDP) Ministry of the Environment.

	securing livelihoods and the continuity of the ecosystems goods and services provided to Tegucigalpa and surroundings.	
Promoting climate-resilient forest restoration and silviculture for the sustainability of water-related ecosystem services	Improving the provision of water services by increasing the climate resilience of vulnerable coniferous forests.	Min Ambiente ICF Climate change Office Funding recently approved from the Green Climate Fund
Restoration and productive ecosystem improvement in the protected forestry zone of El Cajón Reservoir (El Yunque Microwatershed)	Improve and restore forest cover through agroecological practices and landscape restoration. A strong emphasis has been given in watershed management for climate change adaptation	Empresa Nacional de Energía Eléctrica, ENEE Funding from the Japan International Cooperation Agency (JICA)
Coastal Biodiversity: regional project for a bi-national management of ecosystems in the northern triangle of Central America	Reduce the overexploitation of fisheries and reduce the conversion and degradation of mangroves and wetlands	IUCN GOAL Association Rhode Island University
Strengthening the governance of marine resources in Omoa and Puerto Cortés	Engage local associations of Puerto Cortés and Omoa in the management of fisheries and strengthen organizational capacity to improve the governance of coastal- marine resources	Inter American Foundation CEM
Smart coasts: integrating climate change in marine protected areas and coastal management of the Mesoamerican Reef ecoregion	Implement climate-smart principles in the management of marine protected areas (including coastal ecosystems such as mangroves and wetland areas) and policy development for the countries that are part of the Mesoamerican Reef to improve climate change adaptation (Belize, Honduras, El Salvador and Guatemala)	Comisión Nacional de Áreas Naturales Protegidas (CONAP)- Guatemala Ministry of Agriculture, Fisheries, Forest, Environment and Sustainable Development- Belize Ministerio de Medio Ambiente y Recursos Naturales (MARN)- El Salvador Mi Ambiente- Honduras
Improving the management of fisheries and development of a municipal model of management for Mesoamerica	Recover small-scale fisheries and improve the protection of natural ecosystems that generate benefits to local coastal communities	RARE Smithsonian Institution
Coastal Marine Project	Increase coverage and effective management of coastal-marine protected areas	MiAmbiente CATIE

Guatemala

Table 8. Relevant Project initiatives in Guatemala.

Institution	Strategic line of work
FUNDAECO	In the Caribbean region they work with different protected areas including: Reserva Protectora de Manantiales Cerro San Gil, Área de Uso Múltiple Río Sarstún, Parque Municipal Montaña Chiclera, Reserva Hídrica y Forestal Sierra Caral, Biotopo Chocón-Machacas, Área de Protección Especial Sierra Santa Cruz, Reserva Hídrica y Forestal Sierra Caral y Parque Nacional Rio Dulce. Their work focuses on fishing recovery areas, implementation of local projects that generates alternative sources of income to the local populations, biological monitoring of mangroves and sea pastures. They have 4 permanent plots to monitor these ecosystems as well as to monitor water quality and fisheries.
National Council of Protected Areas (CONAP). Tecnical unit for the Punta de Manabique Wildlife Refuge	Oversees technical and legal administration of the Punta de Manabique Wildlife Refuge. They implement work to strengthen organizational structures in 17 communities. The do control and patrol activities to monitor forest resources, environmental education, research, and biodiversity monitoring. They oversee and implement the management plan for the protected area
Regional Project Coastal Biodiversity IUCN-GOAL/ USAID	Project has four objectives: implement research activities to improve community livelihood strategies, environmentally friendly biocommerce, strengthen governance mechanisms and improve national policy frameworks and implement economically and environmentally sustainable development practices in landscapes
ASOPROGAL	Support community-based groups through its small grant program to support locally based groups that live inside and in buffer zones around protected areas.

Regional Projects

Table 8. Relevant project initiatives in the region.

PROJECT INITIATIVE	OBJECTIVE	IMPLEMENTING AGENCY
Protection and Sustainable use of the Selva Maya	This project focused on the protection and sustainable use of the Selva Maya, the tropical forest shared by Belize, Guatemala and Mexico. The goal was that government and civil society may implement concerted measures to protect and sustainably use biodiversity and natural resources in the Selva Maya region.	Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) Central American Commission of Environment and Development (CCAD) Forest Department (FD)- Ministry of Sustainable Development, Climate Change & Disaster Risk Management
Monitoring for Biodiversity and Climate Change	The overarching goal of the project is that results of regionally coordinated biodiversity and climate change monitoring in the Selva Maya region are channelled into policy-making to greater extent	Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) Central American Commission of Environment and Development (CCAD)

		Forest Department (FD)- Ministry of Sustainable Development, Climate Change & Disaster Risk Management
Selva Maya Natural Resource Protection	To maintain the ecosystem functions and cultural values of the Selva Maya that promotes the welfare of its people and provides environmental services of global importance	The German Cooperation through the KfW (German development bank) Federal Ministry of Economic Cooperation and Development of Germany (BMZ) International Union for Conservation of Nature (IUCN) Forest Department (FD)- Ministry of Sustainable Development, Climate Change & Disaster Risk Management

Regional Approach

Partners to Initiative 20x20 have undertaken a number of restoration investments in the area, that provide useful information (https://initiative20x20.org/restoration-projects). The cost of reforestation in the area has been used to estimate the costs of restoration in the project. A link to this project will serve to enhance the role of nature-based solutions as a measure for adaptation and building resilience to climate change.

Inputs and lessons derived from projects under implementation as part of Initiative 20x20. Partners to Initiative 20x20 have 150 projects under implementation as of early 2022 (https://initiative20x20.org/restoration-projects). WRI and CATIE are members of the steering committee of the Initiative. Lessons from projects under implementation -including prioritization of areas to be restored, restoration for multiple objectives and a landscape approach- will be brought to bear on the activities of the project by both institutions. Also, the Initiative has a number of thematic task forces that address several key factors in restoration projects (incentives, biodiversity issues, policies, best practices). Access to experts in these task forces will inform project implementation for better outcomes.

The North American Wetland Conservation Act (NAWCA: https://www.fws.gov/birds/grants/north-american-wetland-conservation-act.php) has provided small grants in the Atlantic Coast of Central America, dedicated to preserve coastal habitat for migratory species. While no projects are located in the specific area of the proposed information, data gathered on the costs of habitat recovery has been used to estimate costs.

H. Learning and knowledge management

If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

In support of the activities sponsored under the program all local actors will benefit from improved knowledge and skills for the communication, planning, implementation and evaluation of adaptation through restoration, and are expected to be informed participants in the changes sought under the project. Component 3 focuses in its entirety on information and knowledge management. Also, activities 4.2.1, 4.2.2, 4.2.3 and 4.4–3.1 have been designed for the purpose of capturing knowledge and disseminate information and lessons learned. At a country level, the information generated will be disseminated through the Ministries leading in national policies and strategies as outlined in Section E. and fed into the Initiative 20x20 website for wider regional and even global access.

Climate change adaptation is recognized as a priority in the Central American region and has been integrated into several regional and national policies and strategies. Specifically, the project is closely aligned with several policies and strategies of the Central American Integration System (SICA)[45], including those listed below:

- The Regional Environmental Strategy Framework (2015–2020)[46] provides a framework and objectives for the regional integration of actions on, *inter alia*: i) climate change and risk management; ii) biodiversity; iii) water resource management; and iv) finance for environmental management.
- The Regional Climate Change Strategy (2010)[47] sets out projections for the impacts of climate change and variability on the region and provides a framework for regional responses to climate change.
- The Regional Strategy for the Conservation and Sustainable Use of Biodiversity in Mesoamerica (2003)[48] articulates priorities for the regional integration of conservation and biodiversity management efforts.
- The Regional Strategic Program for Forest Ecosystems Management (2014)[49] aims to support the sustainable management and protection of forest ecosystems by promoting regional cooperation, through decentralised governance and through recognising the multifunctional nature of these forests.
- The Regional Agro-environmental and Health Strategy of Central America (2009–2024) aims to promote sustainable, intersectoral management of agricultural ecosystems, with a focus on

[45] The Central American Integration System (SICA) is a regional institution that facilitates diplomatic and economic integration between Central American states. The members of the organisation are Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and the Dominican Republic. https://www.sica.int/sica/sica_breve_en.aspx

[46] CCAD, 2014. Estrategia Regional Ambiental Marco 2015 – 2020 (ERAM). Available at: http://www.sica.int/download/?94463

[47] CCAD, 2010. Estrategia Regional de Cambio Climático (ERCC). Available at: http://www.sica.int/ownload/?96568

[48] CCAD, 2003. Estrategia Regional para la Conservación y Uso Sostenible de la Biodiversidad en Mesoamérica. Available at: http://www.sica.int/download/?9032

[49] CCAD & CAC, 2014. Programa Estratégico Regional para el Manejo de los Ecosistemas Forestales (Perfor): región de Centroamérica y República Dominicana. Available at: http://www.sica.int/download/?96569

sustainable land management, climate change, biodiversity, agro-environmental businesses and healthy lifestyles.

- The Food and Nutrition Security Policy for Central America and the Dominican Republic (2012–2032) promotes regional action to develop sustainable, healthy and culturally-appropriate food and nutrition systems.
- The Regional Strategy for Sustainable and Climate-adapted Agriculture for the SICA region (2017) sets out priorities for the agricultural sector in terms of climate change adaptation, sustainable livelihoods and the development of sustainable, low-carbon agricultural landscapes.
- The Central American Strategy for Rural Development (2010–2030) seeks to build the capacity of rural communities, government institutions and CSOs to promote innovative and inclusive rural development mechanisms.
- The Strategy and Plan for Integrated Water Resource Management (IWRM) in Central America (2010) promotes regional cooperation for IWRM to improve water security and access to water and promote the efficient and sustainable management of water resources.

The Regional Training Program, led by CATIE, will target both national level decision makers and local technical staff involved in restoration actions for the three participating countries. As outlined, the Regional Training Program builds on CATIE's experience designing and implementing courses in the thematic areas of restauration, adaptation to climate change, agriculture among other topics.

I. Consultative process

Describe the consultative process, including the list of stakeholders consulted, undertaken during programme preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

The consultative process was carried out with the support of local experts in the region and received guidance and coordination from the executing organizations. Further, those involved in the consultation process were accompanied by representatives from CATIE in each of the country offices. The summary reports on the results of the consultation process are presented in full in Annex III. A list to the stakeholders consulted is also comprised within the same annex.

Belize

The Belize consultative process **involved forty environmental and social professionals/groups,** community members, women and indigenous representatives. Recent and current local and small-scale restoration/reforestation initiatives in Belize were identified, twenty-eight activities conducted inland and twenty within the coastal zone. Six Government agencies, four statutory bodies, twenty-three local NGOs/CBOs, and at least twelve international organizations are involved with restoration and reforestation, policies, plans, maps, and projects within the country.

The consultation revealed a high level of interest and willingness among community members, including farmers, tour guides, businesspeople, women, youth, and Indigenous communities, to become involved in landscape restoration projects. School and youth organization administrators

are interested in engaging students. Many farmers still resist change, but several groups are beginning to recognize issues caused by riparian and wetland deforestation and starting to consider alternative strategies to current practices. Members of Indigenous communities in both southern and northern Belize are interested in restoration, and some have recently implemented reforestation projects.

Several local NGOs/CBOs provide well-developed outreach and education programs and several decades of applied research in forest and watershed ecology has been ongoing through REAs, EIAs, thesis and dissertation work, and published research. International research groups are teaming up with Belize colleges and universities to address areas of national interest. Government agencies are staffed with qualified people promoting and supporting conservation and restoration initiatives.

At the community level, each village is different, with men dominating in some communities and women taking leading roles within other communities. Specific efforts are needed to ensure that women and young girls are involved in conservation and restoration initiatives, which is more probable given that more young women are attracted to agricultural programs within high schools and community colleges than in earlier years.

Key conservation and cultural organizations active in southern Belize which will become involved in a project within the Monkey River Delta and Watershed include Ya'axche Conservation Trust, Toledo Institute for Development and the Environment,, the Monkey River Watershed Association and the Maya Leaders' Association, and the Sarstoon Temash Institute for Indigenous Management. Challenges and conflicts include political division among different community groups, many resource users who are still not fully engaged in conservation practices, and some fractions (particularly southern Maya communities) which do not fully trust the GoB and outsiders.

Regarding gender considerations, the consultation revealed a higher willingness by some women's groups to uptake new information, technologies and best practices as, most often than men, women will be more accepting of risk when there is knowledge that engagement may result in an improvement in the family's welfare. However, the consultation process in Belize also noted on differences in empowerment across different localities. As a result, this preparation phase notes that it will be key to consider the right way of engaging women (e.g., a time when she may not be detracted from childcare, requesting the leader in a community to convene other women and respect local practices so as to avoid making an unnecessary issue of gender balances).

The major conclusion from this consultation is that considerable opportunities exist for effective collaboration with local NGOs and CBOs and the communities with which they closely work in the implementation of landscape restoration initiatives. There is a growing interest among select community groups, GoB agencies, NGOs/CBOs, and international funding agencies to address landscape degradation while building climate change resilience. The implementation of a nursery network to meet demand for trees also provides strategies for increasing food security.

Vital information on strategies to work successfully with farmers, youth, women, Indigenous groups, and communities has been accumulated from experts with many years of experience. This compilation can be useful for many organizations involved in restoration and other conservation initiatives.

Monkey River Delta and Watershed is a good choice for targeting a restoration initiative within the coastal landscape of Belize for a number of reasons, including:

- One of the oldest settlements in Belize is threatened by coastal erosion related to several key development factors worsened by climate change.

- TIDE, one of our oldest and most stable NGOs, has been involved with this area for many years and includes residents of Monkey River Village on their staff.
- Ya'axche and TIDE have been involved in successful restoration projects within riparian and valley forest areas and are both very community-focused, contributing to local livelihoods.
- Banana and shrimp producers, industries that have threatened the ecology of this area, are becoming more supportive of positive solutions, and are key stakeholders in restoration initiatives.
- The newly formed Monkey River Watershed Association, organized and supported by community members and businesses in the watershed, is a collective of concerned citizens wanting to contribute to the protection, conservation, and sustainable use of their home watershed.
- Many studies have been conducted on this watershed and coastal area by researchers sharing long term association with many residents. Monkey River villagers worked closely with researchers on these projects made possible through sharing of local knowledge.
- The "Roadmap for Restoration of Monkey River, its Watershed, and its Shore" provides a relatively complete review of the issues and proposes a range of solutions to address sedimentation and erosion challenges facing Monkey River coastal areas that are further stressed by extreme weather events, including droughts, floods, and hurricanes.
- Not only is there a high probability of success, given the skills, talents, experience, and concern among stakeholders, resident and non-resident, this project can serve as a model and even as a training area for other groups throughout Belize wanting to restore, conserve, protect, and wisely use their home watersheds and coastal areas.

Guatemala

Cerro San Gil Protected Reserve and Río Dulce National Park are two protected areas that connect to the Izabal Lake and Amatique Bay through the Río Dulce watershed. Criterion for selecting this landscape included: being a biologically rich landscape encompassing a wide range of natural ecosystems and land uses as well as proximity to the other countries (Honduras and Belize) which generates an opportunity to coordinate, implement and exchange experiences at a regional level.

The consultation process involved the participation of 17 different organizations that included government institutions, NGOs, protected area managers, local governments, community-based groups and representatives from indigenous communities and women´s groups. Local and regional authorities included representatives of the National Council of Protected Areas, CONAP, Ministry of Environment and Natural Resources (MARN), the Naval Brigade, public protected areas present in the Río Dulce Watershed (Río Dulce National Park and Cerros San Gil).

Main concerns raised by the participants included the rapid loss and degradation of forests taking place inside and outside the protected areas. A lot of this is associated to the expansion of agriculture activities and illegal logging. Lake Izabal and most surrounding rivers in the watershed provide the main source of drinking water to most of the communities and currently it´s being heavily impacted by contamination from sedimentation and runoff from agricultural fields, mines and deforestation which put a strain in the availability of water during the driest parts of the year. General impacts associated with excessive rain include slope instability, landslides, soil run-off in

the upper parts of the watershed and flooding and strong storm surges that impact infrastructure in the lower sections of the watershed and coastline.

The organizations/institutions that were consulted meet regularly and work together to coordinate and implement different measures at a local level in an effective manner. The consultation revealed that key issues raised by the communities include: the need to provide and implement schemes to promote forest conservation and forest restoration, implement and reinforce watershed management plans to reduce human impacts in the watershed, raise general public awareness about the importance of forests to address climate change impacts, and integrate the youth and women in reforestation initiatives linking schools and homes. Women involvement in conservation and restoration initiatives is critical because they can transmit knowledge and awareness to the younger generations. Community based tourism has a lot of potential to generate economic income that is based in protecting the forest resources, promote good agricultural practices by increasing tree cover, implement soil conservation practices to reduce sedimentation run-off, reduce the use of agrochemicals. Protected areas should also implement a restoration component in their protected area management plans and implement biodiversity and water quality monitoring programs.

All the organizations consulted expressed a strong interest in supporting the Project and requested to be kept informed/notified for any advances in the process.

Honduras

The consultation process in Honduras was implemented with a series of workshop meetings, interviews, and site visits with representatives from the central government in Tegucigalpa and various sites across the northern region of the country. A total of 29 organization/institutions participated in the process involving government authorities from central and regional government, academia, NGOs, women organizations, and community leaders. Consulted government authorities included representatives of the Ministry of Environment (MIAmbiente) and the National Institute of Conservation and Forestry Development (ICF) and the Agriculture and Livestock Secretariat (SAGA).

The pilot site selected included: the Cusuco National Park and neighboring buffer areas in the Merendon Municipal Reserve and associated coastal areas located in the Sula Valley that actually extends all the way to the borderline with Guatemala. The region includes a very unique and wide variety of natural ecosystems including tropical cloud forest, lowland tropical forest, mangroves and lagoons. These protected areas are responsible for producing most of the water supply to Puerto Cortés (the most important commercial port city), Omoa, and Tela.

A Gender Assessment was also conducted and provided the following insights:

- The Honduran population, multiethnic and majority female (51.7%), cohabits in a country that has been ranked as one of the most unequal countries in Latin America in terms of development (Gender Inequality Index of 0.479 versus HDI 0.611), and with a gender gap of 27.8%, according to the World Economic Forum. This condition of inequality particularly affects women and girls, but also the population living in poverty, and the population exposed to any condition of vulnerability, whether physical, psychological, social, environmental, economic, or structural.
- Women in Honduras have a very small share of the overall wealth, and even the parts that they have seem to reinforce their roles as homemakers and caretakers. Honduras has extremely unequal income distribution, and high underemployment. Over half of the

country lives on less than two dollars a day, and the majority are women. Poverty mainly is a cycle perpetuated by lack of opportunity and education.

- Honduras, especially in the rural areas, generally has a patriarchy system, and gender roles many times put women in a subordinate position. Such gender roles dictate that men dominate the public sphere, while women are supposed to conform and adhere to the realm of the domestic sphere. This means that women are doing all the housework and raising the children, therefore their work and personal life are intertwined. Specific efforts are needed to ensure that women and young girls are involved in conservation and restoration initiatives, which is more probable given that more young women are attracted to agricultural programs within high schools and community colleges than in earlier years.
- The rural population lives in conditions of poverty and inequality that directly influence the deepening of aspects related to the feminization of poverty; limitations in access to basic services, resources, economic opportunities, and decent employment (livelihoods); vulnerability to violence, especially Gender Based Violence (GBV); and the continuity of the gender gap that exists in terms of participation at the organizational or political level.
- This situation has been aggravated by the circumstances by the devastation caused by huriicanes Eta and Iota that affected more than 4 million people, and which have uncovered the conditions of violence and vulnerability to which women and girls in Honduras are exposed.

Consultation with national authorities.

In parallel and subsequent to consultations with local communities, a detailed consultation and engagement process took place with National Governments and other central institutions from all three countries. The consultations were carried through local meetings in the capitals until November 2019. Afterwards, consultations continued through video conferences and exchange of correspondence given the limitations imposed by the health emergency and the limitations to travel. However, a discussion was held with Minister Habet of Belize regarding all aspects of project design and implementation during COP 26 in Glasgow in early November 2021. Discussions were also held via video conference with Minister Mario Rojas of Guatemala in May 2021 and correspondence was exchanged with Minister Liliam Rivera of Honduras in January 2022. A presentation to CICAD was made in February 2019 to get the Ministers of the region acquainted with the status of preparation of the project at their Ministerial meeting in Belize. A summary of all the consultations is presented in the following table: :

Table. List of national authorities consulted

Country	National Institutions and representatives	Dates or period of consultation	Consultation technique
Belize	Minister of Environment Orlando Habet	May 2021-January 2022	Video conference held in October 2021. Exchange of written communications during the period. Confirmation of site selection. Meeting at COP 26 in Glasgow. Whatsapp communications.

	CEO Coastal Management Authority Chantalle Clarke Samuels	January 2020-November 2021	Video conference held on May 22, 2021 as part of the Annual Partners Meeting of Initiative 2021 and dealing with the adaptation project. Video conference and discussions on the selection of the Monkey River Delta as project site. Exchange of written communications on all aspects of the project during the period
	Wilber Sabido Forest Department Chief Forest Officer	January 2019-January 2022	Video conference held on May 22, 2021 as part of the Annual Partners Meeting of Initiative 2021 and dealing with the adaptation project. Video conference and discussions on the selection of the Monkey River Delta as project site. Meeting at COP 26 in Glasgow. Whatsapp communications.
	Elma Key Director ERI University of Belize	Since start of 2020	Email exchanges on conservation restoration plans in coastal areas of Belize
	Previous Minister Omar Figueroa	Since June 2018 until December 2020	Email communications on the scope of the project and government priorities and site selection.
Guatemala	Mario Rojas Minister of Environment	Since start of 2020	Discussion on site selection Video conference held on May 22, 2021 as part of the Annual Partners Meeting of Initiative 2021 and dealing with the adaptation project. Email communications on the scope of the project and government priorities
	Juan Carlos Diaz Coordinador de Cooperación I Ministerio de Ambiente y Recu Guatemala	Since start of 2019	Email communications on the scope of the project and the identification of local institutions Video conference held on May 22, 2021 as part of the Annual Partners Meeting of Initiative 2021 and dealing with th adaptation project.
	Mariano Braganza Unidad de Cambio Climático del Ministerio de Agricultura, Ganadería y Alimentación - Ministry of Agriculture	June 2021	Email communications on the scope of the project and the identification and participation of the Ministry of Agriculture, office of climate change and local institutions
	Lorena Córdova Unidad de Cambio Climático, Bosques y Desarrollo Sostenible		Email communications on the scope of the project and the identification and participation of national institutions.
Honduras	Liliam Rivera Minister of Environment	December 2021	Correspondence on the site for Project activities.
	Juan Manuel Gonzales Adviser to the Minister	2019-2022	Video conferences and phone calls on the objective, scope and activities of the project.

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	Candy Alvarado MOCAPH Mesa de organizaciones CoManejadoras de Áreas Protegidas de Honduras.	June 2021	Emails and video Conference on participation of local institutions in the Project.
CICAD	Ministerial Meeting 2019	February 2019	Presentation of Project objective, scope and activities for discussion and endorsement.

General Findings and Results from Consultation

Main concern raised by the participants during the consultation process is that most vulnerable groups suffering the impacts of climate change are the Garifuna communities. These communities have settled down in many coastal zones in Northern Honduras. Main impact associated to climate change is beach erosion and flooding when there is excessive rain and strong storm surges and water scarcity during the dry season. Forest cover is declining quite rapidly due to deforestation and land-use change associated to oil palm plantations and incursions of migrant people that move from different parts of the country seeking security and land to establish farms. Relevant stakeholders showed interest in prioritizing efforts for natural ecosystem restoration in coastal zones, inside and outside protected areas, find alternative economic activities for local communities, strengthen interinstitutional coordination in the implementation of activities. International cooperation efforts also need to be aligned with local themes of interest in order to engage more the local stakeholders. There are very promising efforts in the Sula Valley with the private sector (African oil palm companies) in round table discussions to reduce the impacts of the activity in the region.

All the organizations consulted expressed a strong interest in supporting the Project and requested to be informed/notified for any advances in the Project proposal.

Table 9. Summary of key recommendations from community consultation and actions taken.

Country	Recommendation	Minority or women groups involved in this recommendation	Action taken in project design
General	**Maximize opportunities for minority groups and women in the area.**	**MRDWA (Belize)** **MOCAPH (Honduras)** **AKTENAMIT (Guatemala)**	**Most activities include a special focus on the involvement of minority groups and the participation of women.**

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General	**The resources from the Adaptation Fund if approved should be used to develop experience for wider replication of the use of nature based solutions as adaptation measures.**		**The project will result in a collection o lessons to be reviewed by CABEI as Implementing Agency for potential replication in the region.**
Belize	Involve local communities in the implementation of restoration projects	MRDWA (Belize)	All field work will be primarily undertaken using local labor and NGOs.
	Nurseries should be developed taking into account local knowledge and labor.	AKTENAMIT (Guatemala)	Seed and germplasm collection as well as nurseries required for the restoration work will be done using local knowledge and labor.
Guatemala	Emphasis should also be placed in preventing illegal logging (avoided deforestation)		Local and national authorities will be involved in the review and adjustment of regulatory measures to prevent *inter alia* illegal logging
	Areas to be restored need to be selected taking into account the history of landslides in the area		Areas to be restored have been preselected based on a set of criteria that includes likelihood of slides. The location of the areas will be confirmed during project implementation in consultation with the local community.
	Consultation should be a continuous process during the duration of the project.	MRDWA (Belize)	The project components have been designed to ensure continuous community consultation and engagement.
Honduras	Project preparation, including details of the approval process with the Adaptation Fund and implementation should be shared with the local community on a timely basis.	MOCAPH (Honduras)	Contacts with the local community are being kept open to provide information before project approval. Once project is approved, Component 2 has been designed to ensure that information is shared and disseminated.

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Garifuna community is most vulnerable and project activities should be designed with this in mind.	MRDWA (Belize) OFRANEH (Honduras)	Project activities in Honduras cover the Garifuna.
Beach erosion and flooding are main concerns that should be included in the project.		Pilot in Honduras covers coastal areas. Mangrove restoration is part of the project activities which will have an impact on coastal erosion and flooding.
Water supply needs to be protected.		Officially declare water production zones, restrict land use and reforest/restore degraded ecosystems.
No land use planning in effect		Institute land use planning to regulate areas for agricultural production.

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J. Justification of funding requested

Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Outcome 1: Strengthened regulations, planning and policy strategies that support restoration as an adaptation measure to achieve resilience to intensifying extreme weather events. ($0.860 Million).

Baseline scenario (without AF resources). National governments and regional bodies are aware of the threats that climate change poses to the sustainable development of the region. However, given the magnitude of social (high rates of poverty, limited access to public services, social unrest in some areas) and economic issues (balance of payments, fiscal deficits, low economic development indexes) facing the region, there is scant concerted action to promote adaptation efforts to the unavoidable consequences of climate change. All countries have developed NAPs (National Adaptation Plans) but given fiscal and capacity limitations, there has been limited on the ground action to implement these plans.

National and local polices depend on short term governmental efforts and there is still low national pressure on change unsustainable land use plans, climate resilient an environmental enforcement depends on economic incentives and large, small owners possess an additional pressure on the local and national governments.

Additionality (with AF resources). Resources would be available to facilitate a regionally coherent set of policies that would otherwise not be available.

Outcome 2: Designed and implement 3 Local Community early warning system for improving alerts and response capacities to extreme weather events (US$0.700 Million)

Baseline scenario (without AF resources). Information access and sharing is vital to successful development and conservation within Belize. Many information systems have been set up to store, manage, and at least share information under certain arrangements. However, there is a need for a more open and publicly accessible system managed by trained archivists. The National Library Service and Information System offers such an opportunity for technical documents on Belize. Several storage systems exist for GIS and mapped information, but more work and collaboration are needed. There also a need for a water quality and soils data storage and sharing system.

At a sub-regional level and along the Atlantic Coast in areas most susceptible to the impacts of extreme weather events, there is a lack of awareness, science-based information and resources available to face the anticipated intensification. As discussed earlier the local population is relatively poor and reliant on subsistence activities. It is also composed of ethnic minorities. All these factors have contributed to poor access to information and insufficient action on adaptation

Additionality (with AF resources). An improved information base, access to adaptation tools and guidelines and early warning systems would be produced. Additionally, the resources would support community agreements to enhance the capacities to implement common solutions and promote associativity to respond to climate change. The AF resources will be critical to invest in these efforts that are unlikely to be undertaken in their absence given the otherwise limited resources available to the participating nations.

Outcome 3: Increase Resilience of 3 socio –ecological landscapes in the Atlantic Forest of Belize, Guatemala and Honduras by restoring public coastal areas with native species and deploy forest economic activities. (US$8.490 Million)

Baseline scenario (without AF resources). Regional cooperation mechanisms like the CCAD are in the process of developing regional strategies for adaptation. Although governments and regional bodies have experience in developing these high-level, conceptual adaptation plans, they have less expertise in implementing concrete adaptation solutions (most notably, the use of restoration) across diverse socioecological contexts. In particular, while there are regulations on land conservation, progress has yet to be made on assembling together a set of coherent regulations that would facilitate the promotion of restoration as an adaptation measure and, climate change considerations have not been thoroughly incorporated into coordinating mechanisms.

Additionality (with AF resources). Under this component resources would be made available to fund the full cost of adaptation through ecosystem restoration in public lands, as required by the intensification of extreme weather events in the project area. It is very unlikely that the resources available in the national budget of the participating nations could be the source of financing for these activities. Also, participating countries have very modest GHG footprints and are therefore clearly exempted from any historical responsibility for the intensification of extreme weather events. The consequences of the intensification are already being experienced but are likely to further increase in the foreseeable future. The investment today by the AF will result in the generation of experience and the ability to quantify costs and benefits associated to the restoration approach.

AF resources will be used to implement concrete climate change adaptation interventions in the vulnerable coastal area. Pilot activities will be used to demonstrate cost of benefits of adaptation measures based on restoration, to reduce their vulnerability to the consequences of extreme weather events.

Outcome 4: Improved knowledge and skills among actors at local, national and regional levels to scale up restoration as an adaptation activity and build regional exchange platforms. (US$1.0 Million)

Baseline scenario (without AF resources) . All three countries are members of Initiative 20x20 and recognize that sustainable land use practice is key to attain several development efforts - specifically those that would counter the effects of extreme weather events. However, there is limited capacity and resources to develop plans that deliver on these objectives in a programmatic way.

Action is lacking, and likely not forthcoming under a business-as-usual scenario to promote and implement pilot uses of restoration that could illustrate the costs and benefits of adaptation over time. Pilots would also have the potential to attract private capital that in the absence of action by government is unlikely to proceed.

Additionality (with AF resources). AF resources would facilitate engagement and participation of local communities and the dissemination of all information generated. The project will generate knowledge on the cost- effectiveness of different concrete interventions, enabling national governments and regional bodies to integrate concrete adaptation knowledge that is nationally and regionally appropriate to their climate change strategies. This will facilitate the effective

conversion of conceptual adaptation strategies into on-the-ground actions, increasing the resilience of vulnerable people across the GMS to shared climate change threats. There are no alternative sources of funding for this type of activities

A key additionality parameter is represented by the **regional local nature of the project**. Without the project it would be very difficult to coalesce the remote regions of Belize, Honduras and Guatemala into a common approach with substantial benefits and efficiencies of scale for each one of the local communities. A substantial fraction of all project activities has a regional character that exploit the benefits of working in an area exposed to a common consequence of climate change affecting mostly poor communities and valuable natural capital.

Resources would target the training of local institutions and communities in the use of restoration for adaptation to climate extremes.

K. Sustainability

Describe how the sustainability of the programme outcomes has been taken into account when designing the programme.

A number of actions have been incorporated into the design of the program to ensure long-term economic, social, cultural and environmental sustainability of the project's outcomes. At a macro-level, Initiative 20x20 will provide a platform for continuing, long-term action to promote the objectives of the project in the participating nations and other Central American countries. However, at the project level, activities will contribute to the sustainability of the project's outcomes as follows:

Social sustainability. Social sustainability is ensured by developing skills, including gender considerations and maintaining a close communication with local and national stakeholders:

- **Capacity building**. The project activities are designed to promote the acquisition of skills and information to maintain the momentum of project activities after its completion. The wide reach and inclusive character of capacity building activities will promote the buy-in and wide dissemination of information and skills. In addition, Initiative 20x20 will use the design and results from the international training program to promote further training in the participating nations and in other 20x20 countries in Central America.
- **Gender considerations.** Activities carried out to deliver on the expected outcomes anticipate a gender balanced participation to include women. Further, attention to minority groups including youth, marginalized communities and indigenous peoples have been consulted in preparation of this project. Continued engagement with these groups throughout the duration of the project is essential for social sustainability and has been explicitly built into most activities.
- **Social Engagement and dissemination of results.** The social engagement activities include actions that will support long term sustainability. The methodology for social engagement once deployed, will be available to further participation after project completion. All information generated by the project will be uploaded into the Initiative 20x20 website for its use even after project completion.

Environmental sustainability. The project contemplates the use of best practices in the selection of areas to be restored, seed selection, nurseries and maintenance procedures to ensure that restoration activities are long lasting and tied to adaptation outcomes.

- **Information and knowledge management**. Activities undertaken under this component will continue after project completion through the maintenance of the regional information system at the CCCCC, the Initiative 20x20 website and other regional tools. Maintenance of the digital warning systems will continue through the Initiative 20x20 and local weather forecasting systems.

Economic sustainability. Economic sustainability is built into this project through a combination of activities.

- **Business development for established nurseries.** Arrangements for maintenance of nurseries and seed collection centers after project's finalization are key the economic sustainability of the project. After project's finalization all project funded nurseries and seed collection arrangements are anticipated to be left under the ownership and management of local organizations involved in the implementation. The local organizations are expected to provide long-term services for future projects, initiatives

and/or private investments in restorative landscape management (agroforestry) as well as reforestation and restoration activities. As part of the marketing for services, linkages with private sector investors associated to Initiative 20x20 will be facilitated through WRI and CATIE.

- **Implementation as key driver for replication**. Project sustainability will be achieved through the implementation and completion of concrete on-the-ground adaptation interventions (EbA) in Belize, Guatemala, and Honduras. These implementations are designed to illustrate the costs and benefits of adaptation. The information obtained and documentation produced will be supportive of replication of the experience at other sites. The project will also support the preparation of a portfolio of investments in restoration, which can be taken by private Impact Funds linked to Initiative 20x20 and others as a result. The regional exchange of information generated through the activities of the project will also support the long-term replication of experiences and the use of lessons learned.

  Pilot activities and projects are an important part of the long-term sustainability of this project. This is because these pilot interventions will allow the generation of a pipeline of projects that can be subject to financing from partners such as CABEI or other multilateral financing partners. A defined pipeline will allow the interventions to have the necessary financing in the medium and long term, and the impact of this project can be replicated and sustained over time, causing an increase in the resilience of the communities of the selected basins.

Cultural sustainability. The project aims to ultimately build resilience to ensure peoples' livelihoods – defined around traditions, ways of life and spaces. The project achieves this by capturing essential cultural values from community consultations and grounding better actions in improved policies that safeguards them.

- **Community consultations**. The project has approached local communities and representatives seeking to capture at an early-stage current practices and livelihoods rooted in tradition. This work highlights the narrow relationship with the natural world and a need to preserve functionality to continue the enjoyment of customs, spaces and ways of life.

- **Institutional Framework.** The dialogue on the regulatory framework is designed to result in changes that will promote the use of restoration for adaptation purposes in coastal zones – a key step for safeguarding ways of life and spaces valued by the communities involved. The restoration options are intended to be incorporated into long-term climate policy instruments such as the NDC under the Paris Agreement and the NAPs. After project completion, these measures and the instruments are anticipated to provide sustainability to actions taken during its implementation. In addition, the three participating nations are active members of Initiative 20x20. Under the initiative an active policy and regulatory dialogue at a ministerial level is maintained, inter alia, in the context of the Madrid Declaration (https://initiative20x20.org/news/declaration-restoration-ministers-unite-restore-land-cop25) which has outlined long term steps and goals in favor of restoration actions in the region, including steps toward mid-century.

L. Environmental and social impacts and risks

Provide an overview of the environmental and social impacts and risks identified as being relevant to the programme.

According to the AF's Environmental and Social Policy, a project can be categorized as either A, B or C. Category C refers to projects "with no adverse environmental or social impacts". Because the proposed project will be undertaking on-the-ground activities, some environmental and social impacts are expected, therefore the risk Category is B.

Table 10. Checklist of safeguards

Checklist of environmental and social principles	No further assessment required for compliance	Further assessment and management required for compliance	Analysis of Potential impacts and risks
Compliance with the Law	**X**		Authorities and other stakeholders were consulted during the preparation of the program, and they did not express any conflict with existing laws or regulation at national or local level. By contrast, the consultation stage managed to capture national interest that the program will be supportive of restoration-based adaptation in coastal areas. In this sense, the project will specifically engage with policymakers through Component 1 to analyze and provide guidance to policymakers on strengthening regulation and/or sub-national programs that are conducive of adaptation to extreme weather events. Meanwhile, Component 3 will seek to implement the pilot restoration projects within sites in the selected landscapes and although the landscapes cover multiple land designations – from protected areas to indigenous lands – the program will ensure that development complies with land management laws.
Access and Equity	**X**		The program recognizes the position of disadvantaged groups and will aim to integrate and empower disenfranchised groups within the program's activities. Training and dissemination practices will be managed with wide access and equity of opportunity.
Marginalized and Vulnerable Groups		**X**	The program takes place in an area inhabited by marginalized and vulnerable groups and these populations are the objective and central focus of the project. The consultations already undertaken reveal a substantial opportunity of engagement in project activities and of significant positive long-term impacts in their well-being and livelihoods. There is however a risk that vulnerable and marginalized groups will be excluded during the implementation project activities. To avoid the exclusion of these communities and groups, they were involved in extensive consultations carried out during the preparation of the full project proposal. The project will prepare an implementation protocol as well as gender action plan to ensure equal participation and that social impacts do not unjustly impact on marginalized and vulnerable groups.

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Checklist of environmental and social principles	No further assessment required for compliance	Further assessment and management required for compliance	Analysis of Potential impacts and risks
Human Rights	**X**		No activities are included in the design of the project that violate established international human rights. Moreover, the proposed project will promote the basic human rights of access to information. There is a Human Rights Commission in each partner country with representatives up to district level that will ensure that human rights at the grassroots level is adhered to and promoted. The project seeks to ensure that benefits of the project are shared broadly in a nondiscriminatory, equitable manner through participatory processes and transparent selection criteria. Extensive stakeholder consultations were held during project preparation and will be continued throughout project implementation. Potential project-related concerns and/or grievances of local communities will be addressed through a Grievance Mechanism.
Gender Equity and Women's Empowerment		**X**	A gender analysis was conducted during the development of the proposal, under the guidance of gender experts and non-governmental organizations (NGOs), to ensure that gender considerations were fully covered during project design. In particular, equal rights, responsibilities, opportunities and access of women to the benefits of climate change adaptation have been considered. For example, where applicable, project activities have been designed to include gender disaggregation (at least 50%), especially on-the-ground activities. For technical assessments as well as capacity building activities, women will be strongly encouraged to participate
Core Labor Rights	**X**		Local communities will be involved in the implementation and maintenance of the restoration pilots. Though the project does not involve hard infrastructure construction, there may be possibilities of accidents while implementing the proposed project's interventions. Core labor rights, including the right to safe working conditions, were considered during the design of the proposed project and will be enforced where necessary during implementation. In addition, both national and regional stakeholders were involved in the design of project activities, ensuring that labor legislation in the beneficiary countries is adhered to. Compliance with labor rights will be ensured in all the proposed project activities through oversight by the National Project Management Units.
Indigenous Peoples		**X**	The project takes place in areas occupied by indigenous peoples, and these will be the amongst the main stakeholders and protagonists of project activities. The community consultations involved representatives from local communities and organizations that are majority indigenous. The project has been designed in consistency with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples

Checklist of environmental and social principles	No further assessment required for compliance	Further assessment and management required for compliance	Analysis of Potential impacts and risks
Involuntary Resettlement	**X**		No activities are or will be included in the project design that will result in involuntary resettlement.
Protection of Natural Habitats	**X**		On-the-ground interventions (restoration) will include the planting of species for enrichment and/or restoration of ecosystems. The project interventions will not have any negative impact on the natural habitat. However, the promotion of restoration interventions through the proposed project (including those based on traditional knowledge) is more likely to result in the restoration, improved management, and protection of natural habitats, as well as strengthening supply of ecosystem goods and services. To ensure that this principle is adhered to, the consultation with and inclusion of relevant stakeholders (community and authority level) during project design and implementation is prioritized. Adaptation interventions involving hard infrastructure (for example, the development of greenhouses) are in very small scale to impact and disrupt natural habitat
Conservation of Biological Diversity	**X**		The project will ensure that the conservation and sustainable use of biological diversity factors into the process of finalizing restoration interventions and demonstration site selection. Adaptation pilot sites have been selected using a participatory approach to ensure that activities do not cause significant loss of biological diversity or the introduction of known invasive species. Furthermore, the focus on restoration under the proposed project will result in the restoration of ecosystems, which will ultimately enhance the biological diversity of the areas surrounding the pilot sites.
Climate Change	**X**		No climate change impacts are anticipated to be caused by the proposed project's activities. Indeed, project activities will contribute to climate change adaptation efforts in the region. The restoration-focused approach adopted for the project is unlikely to result in maladaptation, exacerbate the impacts of climate change threats (droughts and floods) or increase greenhouse gas emissions. The project will contribute to climate change adaptation efforts and the results will be incorporated in the NAPs.
Pollution Prevention	**X**		Project activities are not expected to result in the generation of any pollution, particularly hazardous or toxic waste. Project design will ensure that all applicable international standards are met to promote resource efficiency and eliminate waste production and the release of pollutants, including carbon

and Resource Efficiency			emissions. In terms of resource efficiency, implementation of the proposed project will not require (during or after implementation) significant amounts of water, energy, materials or other natural resources.
Public Health	**X**		The program's activities are not associated to any negative impacts on public health and thus the program does not pose a risk.
Physical and Cultural Heritage		**X**	There is no risk that the adaptation interventions could result in negative impacts on physical and cultural heritage. The participatory approach to project design included the use of local knowledge to ensure that physical and cultural heritage is not negatively affected by on-the-ground adaptation activities. In addition, the location of physical and cultural heritage sites will be considered during the implementation since inception to reduce the likelihood of negative impacts related to project interventions.
Lands and Soil Conservation	**X**		Project activities will promote land and soil conservation across the demonstration sites through restoration

Compliance with the Funds Environmental and Social Policy

The project's compliance with the principles of the Fund's Environmental and Social Policy will also build to avoid any environmental and social while also mitigating any associated risks. They will be addressed by the project as follows:

Access and equity. All activities supported by the project are designed on the basis of fair and equitable access to benefits. The pilots will take place in areas with predominant minority populations, have been identified and will be implemented with full participation of, and informing the local communities and focusing both on the adaptation value as well as the benefits on livelihoods.

Marginalized and vulnerable groups. Most project activities take place along the Atlantic Coast of the participating countries in areas that are home to ethnic minorities, subsistence farmers, artisanal fishing communities and impoverished settlements. The benefits from the restoration activities will accrue in great part to these communities by increasing the resilience of their surroundings to the consequences of the intensification of extreme weather events. The community consultation processes identified these groups and shared information and received their suggestions on the scope of activities. Most activities will provide a focus on the participation of minority groups.

Gender Equity and Women Empowerment. Capacity building activities are being designed and will be implemented in a manner that will allow for gender conscious social engagement. Most activities will provide a focus on the participation of women.

Indigenous peoples. Project activities have been designed and will be implemented, taking into account the special information and participation needs of indigenous peoples in the project areas as per the findings of the community consultation.

Protection of natural habitats. The project activities will restore and strengthen natural habitats through reforestation and restoration activities. Specifically, degraded areas will be restored inside the Cerro San Gil reserve in Guatemala, the Sierra del Merendon protected area in Honduras and along protected riparian areas and in protected coastal mangroves in Belize and Honduras.

Conservation of biological diversity. The restoration activities will result in biodiversity gains as gains in vegetation cover and restoration of habitats will protect biodiversity assets and gains in population of local species.

Climate change. The project is designed as an adaptation measure to the consequences of climate change, specifically, the intensification of extreme weather events in the most affected coastal areas in the region. The rationale and activities, as well as outputs are all designed around the issue.

Health safety. All future activities will be affected by concerns and impacts from the global health emergency. Countries participating in the program are not exempted from the consequences of the COVID 19 epidemic. As of late spring of this year, and according to WHO reports, Belize, Guatemala and Honduras have managed a relatively low rate of infection with limited fatalities. There are no widely available reports on the incidence along the coastal area. However, the rural nature of the interventions and the low population density in the target area may further facilitate implementation and ease concerns. Most field work will be undertaken through local labor; there will be no use of outside workers in the areas under restoration, reducing the potential for import of infection cases. In any event, the activities and pilots will be conducted in a manner consistent with WHO and country guidelines and any additional applicable recommendations.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Management arrangements

Describe the arrangements for project / programme management at the regional and national level, including coordination arrangements within countries and among them. Describe how the potential to partner with national institutions, and when possible, national implementing entities (NIEs), has been considered, and included in the management arrangements.

Implementing Agency.

Activities under the project will be implemented through the **Central American Bank for Economic Integration (CABEI)**. CABEI is an international multilateral development financial institution. Its resources are continuously invested in projects that foster development to reduce poverty and inequality; strengthen regional integration and the competitive insertion of its member countries in the global economy; providing special attention to environmental sustainability.

Its headquarters are in Tegucigalpa, Honduras, and has regional offices in Guatemala, El Salvador, Nicaragua, Costa Rica , Panamá, Dominican Republic, and the Republic of China Taiwan. It also has activities in Belize.

The Bank's objective is to promote the economic integration and the balanced economic and social development of the Central American region, which includes the founding countries and the non-founding regional countries, attending and aligning itself with the interests of all of its member countries. More recently, it has adopted an emphasis to promote climate change actions in the region and in particular to promote activities that will result in strengthening the resilience of its member countries to the anticipated impacts of climate change.

CABEI's **2020-2024 Institutional Strategy** gathers the experiences of the Bank's sixty years of work, the global economic and geopolitical context it faces, and the institutional challenges confronted in itself and that demand reforms. The Strategy is the guide that the Bank must follow in order to support the Central American countries in their efforts to achieve new phases of economic development and better opportunities for well-being. It is also the portal for the international community to more clearly identify its possibilities for action in the region and the added value that the Bank represents in this effort by accompanying other multilateral organizations, friendly countries and organizations of a different nature.

CABEI places an emphasis on regional integration through regional initiatives in specific sectors, financing and promoting the region as an integrated market. The proposed project meets both the institutional strategy and its emphasis on integration.

CABEI intends to use the experience gathered through project implementation as a basis for further replication and start up of adaptation activities in the region.

CABEI will be responsible for annual project reporting to the AF.

Executing Agency.

The program will be executed by World Resources Institute (WRI), a global environmental think tank that goes beyond research to put ideas into action. WRI's transformative ideas protect the earth and promote development because sustainability is essential to meeting human needs and

fulfilling human aspirations in the future. WRI spurs progress by providing practical strategies for change and effective tools to implement them. WRI has a global reach, working with more than 400 partners in 50 countries. WRI Mexico's office oversees activities in Central America.

WRI's projects contribute to one or more of four program goals: **1. Climate Protection** Protect the global climate system from further harm due to emissions of greenhouse gases and help humanity and the natural world adapt to unavoidable climate change. **2. Governance** Empower people and strengthen institutions to foster environmentally sound and socially equitable decision-making. **3. Markets & Enterprise** Harness markets and enterprise to expand economic opportunity and protect the environment. **4. People & Ecosystems** Reverse rapid degradation of ecosystems and assure their capacity to provide humans with needed goods and services.

WRI operates The International Climate Action Initiative. The International Climate Action Initiative works to advance national and international cooperation on climate change and to catalyze ambitious, equitable action and implementation of the Paris Agreement. the Initiative works on implementation of the Paris Agreement in order to meet its stated goal of limiting temperature rise to 1.5, or even 2 degrees, Celsius. For example, PACT works with partners around to world to develop robust and effective transparency and accountability rules and processes for the Paris Agreement. And the CAIT Paris Contribution Map was developed to be a resource for stakeholders in the UN climate process, allowing users to better understand country climate mitigation contributions.

WRI also operates The Global Commission on Adaptation together with more than 75 partners, to scale up climate adaptation solutions. Through its Nature-Based Solutions Track, the Commission is bringing much-needed attention to nature's largely untapped role in adaptation, catalyzing efforts to scale up NBS through initiatives that address key barriers, and bringing together governments, the private sector, and civil society. The commission will support WRI's role as executing agency providing policy information and advice.

WRI also operates the Global Forest Watch. Global Forest Watch (GFW) is an online platform that provides data and tools for monitoring forests. By harnessing cutting-edge technology, GFW allows anyone to access near real-time information about where and how forests are changing around the world. GFW will support WRI's role by providing information on the degree of degradation/restoration over the target area, even after the project closes.

WRI is the secretariat to Initiative 20x20. The Initiative is Initiative 20x20 is a country-led effort seeking to change the dynamics of land degradation in Latin America and the Caribbean by bringing 20 million hectares of land into restoration by 2020. The initiative—launched formally at COP 20 in Lima—supports the Bonn Challenge, a global commitment to bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030, and the New York Declaration on Forests that seeks to restore 350 million hectares by 2030.

Seventeen Latin American and Caribbean countries and three regional programs have committed to begin restoring more than 50million hectares of degraded land by 2020 through Initiative 20x20.

The initiative is supported by more than 70 technical organizations and institutions and a coalition of impact investors and private funds deploying US$2.5 billion in private investment.

The Initiative will support WRI's role by providing liaison with countries at a ministerial level and identify possible private impact investment partners to support follow up activities after the pilots are designed.

As Executing Agency, WRI will:

- Act as the overall coordinator of all project activities.

- Lead the implementation and coordination with the technical team on all project activities.
- Be responsible for ~~annual project reporting to the AF and~~ semi-annual reporting to the Steering Committee.
- Monitor project implementation and when required implement corrective actions to ensure compliance with timetables and allocation of resources.
- Supervise day to day activities on the ground through country coordinators

National and local Implementing and Liaison partner.

CATIE is an international organization founded nearly 50 years ago. CATIE seeks to promote the sustainability of ecosystems, productive systems and landscapes, applying the scientific and technical knowledge it generates with partners, training new leaders and contributing to human well-being in Latin America and the Caribbean. CATIE´s vision is to be a world benchmark in research, education, and innovation for the sustainability of ecosystems, landscapes, and productive systems for human well-being in Latin America and the Caribbean. CATIE currently operates nearly 50 projects in ten countries. CATIE seeks impact through four work lines: Socio-ecological intensification for resilient sustainable production; Restoration and conservation of ecosystem functions and services in productive landscapes; Economy, finance, green business and inclusive value chains; Governance and decision-making tools for inclusive human well-being.

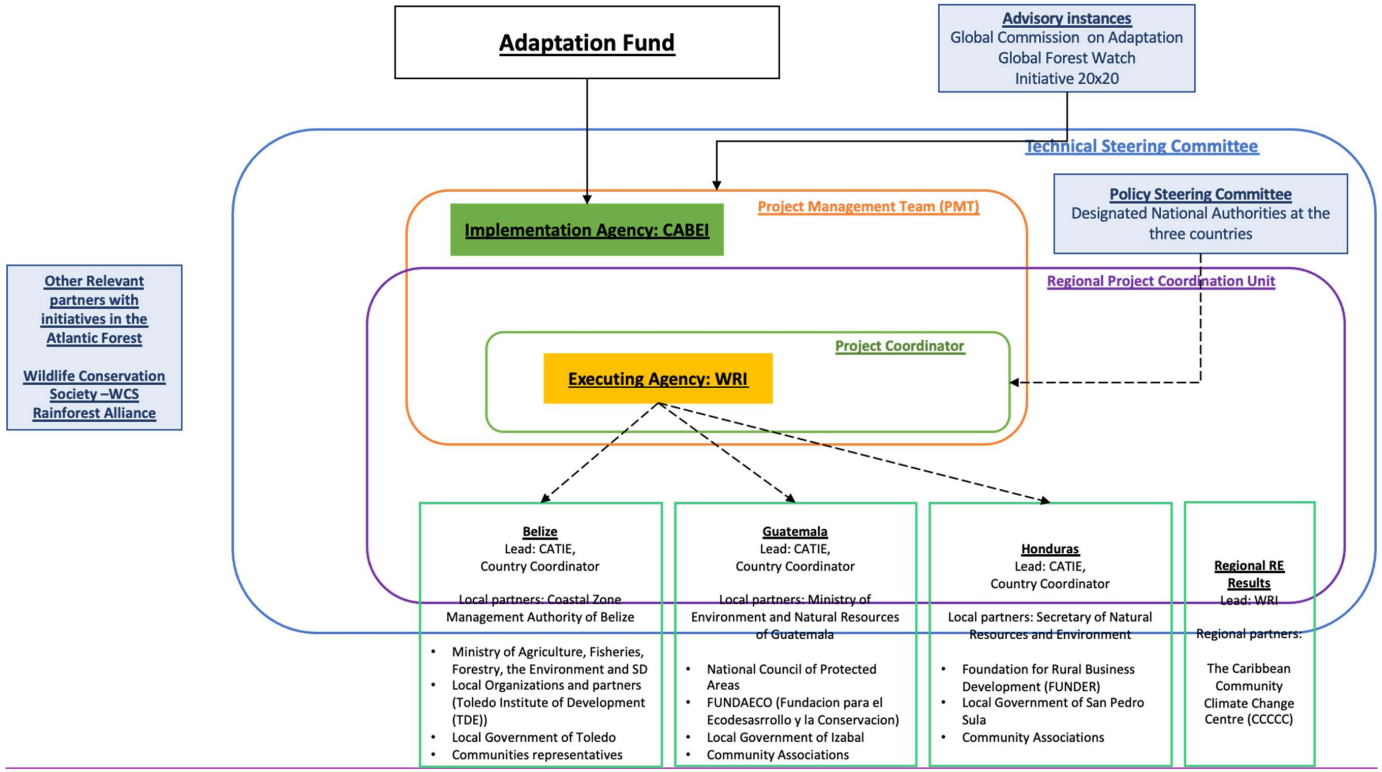
CATIE is a founder Technical Partner of Initiative 20x20. As partner executing agency in the countries, CATIE will:

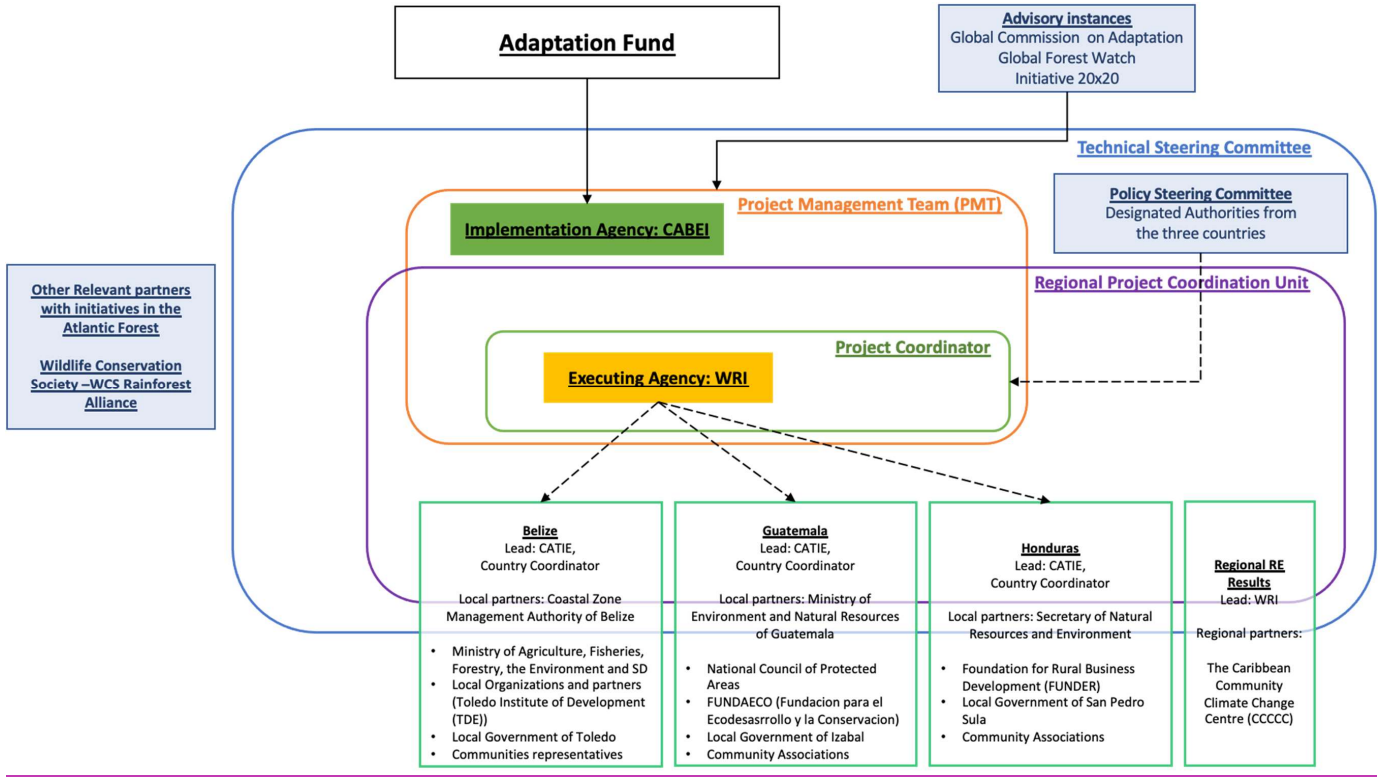
- Support the overall coordinator of all project activities and provide technical advice and guidance to the management team.
- Lead all the activities related to capacity Building, local engagement, and coordinate activities related to the project at a country level
- Support implementation of all project activities.
- Support through its country offices in Honduras and Guatemala the policy dialogue under component one and all capacity building and information activities.
- Support the monitoring of project implementation and when required implement corrective actions to ensure compliance with timetables and allocation of resources.
- CATIE country offices will provide the logistics and technical support and supervision of the country coordinators
- CATIE country offices will assist in providing support for policy dialogue and discussions with national authorities and will provide logistics and office support to the country coordinators

Under component 2, sub grants will be established with local NGOs for the purposes of implementing the adaptation measures.

Policy Steering Committee.

The Committee is composed of the principals or representatives from the Designated ~~National~~ Authorities and the Climate Change Offices from each country. The Committee will have as main task to provide climate policy direction and support to the Executive Agency and to comment and review the results of the project from a policy perspective.


Adaptation Fund
Advisory instances
Global Commission on Adaptation
Global Forest Watch
Initiative 20x20
Technical Steering Committee
Policy Steering Committee
Designated National Authorities at the three countries
Project Management Team (PMT)
Implementation Agency: CABEI
Regional Project Coordination Unit
Project Coordinator
Executing Agency: WRI
Other Relevant partners with initiatives in the Atlantic Forest
Wildlife Conservation Society –WCS
Rainforest Alliance
Belize
Lead: CATIE,
Country Coordinator
Local partners: Coastal Zone Management Authority of Belize
Ministry of Agriculture, Fisheries, Forestry, the Environment and SD
Local Organizations and partners (Toledo Institute of Development (TDE))
Local Government of Toledo
Communities representatives
Guatemala
Lead: CATIE,
Country Coordinator
Local partners: Ministry of Environment and Natural Resources of Guatemala
National Council of Protected Areas
FUNDAECO (Fundacion para el Ecodesasrrollo y la Conservacion)
Local Government of Izabal
Community Associations
Honduras
Lead: CATIE,
Country Coordinator
Local partners: Secretary of Natural Resources and Environment
Foundation for Rural Business Development (FUNDER)
Local Government of San Pedro Sula
Community Associations
Regional RE Results
Lead: WRI
Regional partners:
The Caribbean Community Climate Change Centre (CCCCC)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Local Government of Izabal
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Honduras
Lead: CATIE,
Country Coordinator
Local partners: Secretary of Natural Resources and Environment
Foundation for Rural Business Development (FUNDER)
Local Government of San Pedro Sula
Community Associations
Regional RE Results
Lead: WRI
Regional partners:
The Caribbean Community Climate Change Centre (CCCCC)

Local Partners organizations interested in project activities related to implementation of restoration activities.

NGOs working with the project will be the main executors of the restoration activities and the ones selecting and hiring the appropriate personnel for the interventions, considering the required technical capacities. They will also collaborate to facilitate the participation of people from the community in field work and the analysis of restoration challenges and the definition of restoration actions. The MRWA will participate in the definition of priority actions and will facilitate their implementation based on the needs defined for the Mono River. Similarly, FUNDAECO's extensive experience in the management and conservation of ecosystems in Guatemala will be used to technically guide participatory restoration actions; and ASOPROGAL's experience in community work and natural resource management in Guatemala and Honduras. CISP will also provide key links with communities to facilitate interventions.

Some of the actions already advanced by the NGOs in the territories will be strengthened by the project and will facilitate the achievement of its objectives and synergy with other important initiatives in the region, such as the work of FUNDAECO in the Smart Coast Project, the work of MAR Fund in coastal marine ecosystems, or ASOPROGAL projects in sustainable production.

A list of local partners per country includes:

Belize.

- **The Toledo Institute for Development and Environment (TIDE)** (http://tidebelize.org/)

The objective of TIDE is to engage stakeholders in the sustainable management of natural resources within the Maya Mountain Marine Corridor of southern Belize for the benefit of all

Established in 1997 as Toledo's first ever NGO, the Toledo Institute for Development and Environment (TIDE) came about due to heightened community concerns about the increasing instances of poaching, overfishing and exploitation of natural resources in Toledo. Mr. Wil Meheia, TIDE's founder, along with a number of fishers and troubled villagers, had some assistance from the Nature Conservancy, and together they attempted to fill the gap left by the discontinuation of the Belize Centre for Environmental Studies (BCES) ecological initiatives in Toledo.

From its humble origins, TIDE was very much driven to ensure that buffering communities were involved with and connected to conservation efforts. Though the staff was limited to 7, and its first management responsibility the Port Honduras Marine Reserve came three years after its inception in the year 2000, TIDE was determined to do what had not been done before – foster sustainable development and conservation practices in its home district. Payne's Creek National Park was assigned TIDE management in 2001 and the progressive Debt-For-Nature Swap was also brokered in that very same year and so the organization grew.

The importance of Belize's biodiversity, and ecological wonders are never lost at TIDE and the organization's mission and vision are guiding principles that have inspired the management and protection of the 158,479 iconic Maya Mountain Marine Corridor acreage, in the organization's care. With a staff of 32 and various partners, TIDE carries out several studies, initiatives, award winning programs, and projects. TIDE works arduously to make certain that community participation in conservation is a motto it operates by, that local knowledge is not neglected, and extends itself to continue being a foremost operating agent in natural resource conservation and community capacity building.

- **MRWA (Monkey River Watershed Association).**

The Monkey River Watershed Association. MRWA is a community-based organization working to conserve and restore the integrity of the entire Monkey River Watershed and ensure that it continues to provide a multitude of benefits to watershed residents and the coastal ecosystem. MRWA's first success after registering in 2017 was to secure a US$50,000 grant from the United Nations Development Programme. The funds were used to pilot test inexpensive beach protection structures in front of Monkey River Village and write a "roadmap" for restoration of the Monkey River watershed. The roadmap itself was completed in April 2019.

- **The Community Baboon Sanctuary on the lower Belize River**

This institution is run by the Women's Conservation Group and provides a world-renowned model of private conservation with a growing interest in landscape restoration, an initiative managed by women.

- **Y'axche Conservation Trust (https://yaaxche.org/)**

Ya'axché believes in preserving the link between healthy ecosystems in nature and healthy communities in the 770,000-acre Maya Golden Landscape of southern Belize. We protect wild places and collaborate with communities to address issues such as deforestation, food security, poverty, and impacts of climate change in order to promote sustainable development.

Ya'axché implements its work through local staff and collaborate with communities, government, and other non-governmental organizations at the local, national, and international level to increase our impact. It utilizes a variety of channels, such as radio programs, community meetings, training workshops, school visits, television appearances, and social media to communicate our message and educate the people of the Maya Golden Landscape and beyond. Its reputation lends itself to powerful advocacy that has brought about policy change to support conservation in the face of a dynamic context.

- **Protected Areas Conservation Trust**

The Protected Areas Conservation Trust is Belize's national conservation trust. The fund collected from visitors to national Parks are then invested in conservation. The expertise if this und could be relevant in component 2 of the project, which will enable restoration of strategic areas in Monkey River some of which could be benefited by resources provided by the fund.

Guatemala

- **FUNDAECO. Fundación para el Ecodesarrollo y la Conservación (https://www.fundaeco.org.gt/fundaeco.org.gt/index.html)**

Field Code Changed

FUNDAECO is an NGO working on sustainable development with emphasis on restoration and conservation issues in the area of Cerro San Gil. It has promoted during the last 10 years a number of programs that facilitate the rural and indigenous community adaptation to the climate change effects. Projects for adaptation and mitigation are:

Agroforestry and Forest Restauration for the Ecological Connectivity, Poverty Reduction and Biodiversity Conservation in Cerro San Gil: with the support of the Livelihoods fund, FUNDAECO supports the communities in the creation of 4.000 hectares of agroforest systems, including the planting of family and community forests, rubber, fruit trees, black pepper, etc. based on dispersed trees, live barriers, shade trees and automatic wind interrupters to increase the forest cover in the agricultural and livestock systems. The project will benefit more than 500 families of 25 Mayan-Q'eqchis and ladino communities that live in poverty and extreme poverty conditions, increasing the food security and increase the family income, thereby reducing its vulnerability to climate change.

With the support of the Global Environmental Facility (GEF), FUNDAECO currently promotes the conservation and sustainable management of forests, as well as the plantation of agroforest systems in the communities of Huehuetenango (located in the highlands) with the objective to reduce the deforestation rate and its vulnerability to climate change. The project will support the protection of 34.357 forest hectares, the creation of a biological corridor and the promotion of agroforest systems with 10 communities. A new initiative of REDD+ for Guatemala will be designed under this initiative.

- **Ak' Tenamit**

Ak' Tenamit, a Guatemalan organization owned and operated by indigenous people, has developed a unique methodology to provide rural-appropriate vocational education for at-risk indigenous youth from communities located primarily in and around protected areas. Its primary campus, located in the middle of the rainforest, is home to some 500 indigenous girls and boys who come from poor rural communities throughout the country.

Honduras

- **MOCAPH**

The key local interlocutor is the MOCAPH (Roundtable Association of Organizations Co-Managers of Protected Areas of Honduras). MOCAPH carries out a diversity of actions and activities, binding to improve the management system of the protected areas of Honduras. One of our orientations is to prepare and elaborate public positions on issues of importance for the country, and especially on protected areas. In addition, with the support of strategic partners, it develops and impart workshops and trainings in each Regional Chapter of MOCAPH, so that members are updated on socio-environmental issues, protected area management instruments, and as a platform for exchange of information. good practices in the framework of co-management.

Through MOCAPH other local actors engaged include:

- **FUNDER**

The Foundation for Rural Business Development (FUNDER) was established to improve the living conditions in rural Honduras by supporting environmentally sustainable entrepreneurship in local communities. FUNDER provides financial support and services to projects with potential for real and measurable impact in rural communities. Services include facilitation of donations and international cooperation funds, volunteer support, and private sector strategic alliances.

- **FOREST OF THE WORLD (FOW).**
  (https://www.forestsoftheworld.org/programs/honduras)

Forest of the World works in Honduras to promote sustainable forest management and encourage restoration activities. By strengthening community forest groups operating in the buffer zones to the three protected areas, we are ensuring an active management of the forest resources, which helps to prevent illegal settlers within the park boundaries. The community forestry groups are organized under the cooperative COATLAHL and the association ANPFOR and certified by the Forest Stewardship Council (FSC), which is the most ambitious and widely recognized forest certification system in the world. Via our partner, FSC Honduras, we encourage Honduran as well as international companies to source sustainably produced, tropical timber from the community forestry groups, giving them an opportunity to have a direct impact on the ground, in the tropical rainforests via their consumption of timber and wooden products.

By establishing coffee or cocoa agroforestry systems, FOW is promoting reforestation of former deforested lands, while at the same time creating a more secure, long-term income for local families. If properly designed, agroforestry systems can benefit local families greatly, as the various crops and trees improve soil fertility and decrease erosion, drought, and inundation. This leads to improved productivity, food security, and resilience to climate change.

- **COMISION DE ACCION SOCIAL MENONITA**

The Mennonite Social Action Commission (CASM) is a local NGO that is supporting human development. This organization works on capacity building for local communities to improve food security, sustainable management of natural resources, and economic development. The objectives of this organization align well with component 3 of the project on capacity building. The project team will coordinate with CASM to enhance and scale capacity-building efforts on adaptation. CASM also has a presence in the Merendon region, making it a valuable partner to coordinate actions given its local knowledge and experience.

- **OFRANEH**

The Honduran Black Fraternal Organization, OFRANEH, emerged in 1978 as a Federation of the Garífuna people of Honduras, uniting in the defense of their cultural and territorial rights, with the purpose of achieving survival as a differentiated culture.

Details on roles in implementation

For implementation, a coordinated and participatory process will be carried out to create empowerment of local stakeholders and political and institutional support with the government authorities of the sectors involved. From the beginning, a scaling-up and sustainability strategy will be developed jointly with the stakeholders, for which all technical elements will be provided, including capacity building processes and the implementation of a communication strategy at all levels. Local stakeholders will have roles associated with the process of coordination, implementation and monitoring of actions in the intervention areas, and should be aware of the goals, means and resources to carry out their function. The NGOs/CSOs will have roles of accompaniment, advice and collaboration to strengthen the joint work to achieve the goals. Each one of them will define the ways and means to get involved in the execution of the project, after

coordination with the project executing unit. The government sector will be the entity that will facilitate the integration of the sectors involved in the territory, as well as the linkage with national agencies, will provide political and institutional support, and will accompany key processes in the development of strategic actions. Through government agencies and local authorities, synergies will be coordinated and carried out with other actors and local initiatives or national initiatives that consider actions in the Project's intervention territories.

B. Financial and project risk management

Describe the measures for financial and programme risk management.

Table 11. Measures for financial and project / program risk management

Identified Risk	Risk type	Risk rating	Mitigation measure	Actors
Long term durability of the restoration pilots	Institutional. The project pilots cease effective operation with end of project funding from AF	Medium	Activities under component 1 have been designed to address/reduce this risk by focusing on a review and improvements in the regulatory Framework to promote stability in regulatory actions. The insertion of the project in the Initiative 20x20 reduces the risk.	CABEI as implementing agency and WRI acting as secretariat to Initiative 20x20 supported by Policy Committee in coordination with CATIE country offices, local communities and authorities.
Changes in administration and counterpart agencies implementing agencies may negatively impact project deliverables.	Institutional Changes in administration result in changes in focus in implementing agencies	Medium	Initiative 20x20 has a strong regional track record, and in the three countries, has maintained partnerships between government and non-government agencies at the national and local levels to ensure continuity. This will be the case in the participating nations. CATIE´s five-decade presence in the three countries, which are all CATIE member countries, is a key contribution in this context.	Participating governments through their commitment and participation in Initiative 20x20 supported by Policy Committee
Disagreements between stakeholders on restoration sites	Social Stakeholders do not find common ground in the implementation of project activities	Low	An agreement has been reached with the governments on the pilot areas and it has been consulted and agreed with the local communities. During implementation the pre-selected pilot sites will be further confirmed in consultation with the local communities.	CABEI as implementing agency and WRI as executing agency and through Country coordinators and local communities and

				the assistance of CATIE.
Lack of buy in from local communities.	Social/ Institutional. Local communities do not feel empowered and do not participate in implementation of project activities	Low	The community consultation has confirmed high degree of buy-in. It will be maintained through regular updates and the involvement in project activities. The local communities, which includes ethnic minorities will be part of the implementation process and participate in all local activities.	WRI as executing agency in coordination with local communities, Country coordinators and the assistance of CATIE.
Restored areas are degraded by human activity.	Environmental. Target areas continue to be degraded.	Medium	The restoration areas have been agreed to be placed in protected areas. Information on the benefits for the community will be routinely disseminated in the project areas.	WRI as executing agency in coordination with local communities. Country coordinators and CATIE country offices.
Natural Hazards	Environmental	Medium	Restoration actions are intended to diminish the impacts that derive from exposure to natural hazards. The projects will rely on best practices to safeguards the project from natural hazards.	WRI and CATIE.
COVID-19	Health.	Low	It is expected that the health contingency will not pose a risk as great as it did early in the pandemic. Many partner organizations have adapted to work remotely, and a strong presence of local partner organizations can signify continued connection with the pilot sites.	WRI and CATIE. Local partner organizations as required.
Land tenure conflicts	Legal	Low	The community consultation has validated the project site selection. The consultation has also indicated the call for participation of local communities which will ensure active participation and buy-in into the restoration processes.	CATIE
Interventions are found to be not cost effective.	Financial The costs of nature-based solutions are higher than alternatives with same impact	Low	Land restoration costs are significantly lower than equivalent hard infrastructure. The costs will be reviewed on comparison with comparable expenditures in restoration in the region.	WRI as executing agency
Climate adaptation benefits do not materialize	Financial/Environmental	Low	Areas have been selected in the context of maximum impact on the desirable effects. During implementation, the expected costs	WRI as executing agency

	No adaptation benefits are measured		and benefits will be reviewed and adjusted if required.	
Early warning systems do not operate as expected and do not deliver the minimum information required.	Technical Systems are not effective in reducing vulnerability and fail to reduce number of injured or fatalities	Low	Systems will be designed taking into account international experience and the track record of Global Forest Watch.	WRI as executing agency.
Natural Hazards	Environmental	Medium	Restoration actions are intended to diminish the impacts that derive from exposure to natural hazards. The projects will rely on best practices to safeguards the project from natural hazards.	WRI and CATIE.

C. Environmental and social risk management measures

Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

Table 12. Measures for environmental and social risk management

Environmental & social principles	Potential Impact and Risk	Risk rating	Mitigation measure	Opportunities for consultation and adaptive management	Responsible entity
Compliance with the Law: *Project does not comply with the local laws and regulations*	Project fails to comply and infringes existing laws and regulations.	Negl.	Project has been designed around restoration of degraded lands in nature reserves/protected land. This activity is in full compliance with existing law		CABEI and WRI with CATIE's support (Project coordinator in each country)
Access and Equity *Project activities fail to meet state of the art standards of equity and access*	Project fails to ensure equity, inclusion, and access in all project activities.	~~Low~~Medium	All activities will be in public land and are designed to benefit local populations with local groups engaged in implementation of filed activities including in the implementation of the pilots. The community consultation has identified groups that will be active in the project activities, however, and given that at the beginning of the project, the areas of intervention will be reconfirmed, as in the case of Guatemala, a database of potential beneficiaries	The implementation protocol as well as the gender action will be the subject of close monitoring in their execution. As activities are implemented their execution will be reviewed under the protocol and gender action plan. Opportunities for additional consultation and modifications will be examined to address any gaps as part of the implementation process and incorporated as required through the project.. A formal review process for both will take place on an annual basis to be supervised by CABEI.	CABEI and WRI with CATIE's support (Project coordinator in each country)

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			must be compiled, with particular attention to women, youth and other vulnerable groups. In addition, in the case of indigenous peoples, decisions derived from the community based on prior, free and informed consultation must be taken into account.		
Marginalized and Vulnerable Groups: Local indigenous groups, creole, Garifuna and other groups are not reached and do not participate effectively in project activities.	Potential exclusion of marginalized and vulnerable groups from project activities	Low	All activities have been designed for the benefit of local populations which are mostly composed of marginalized and vulnerable groups. Local knowledge and labor will be deployed for restoration work	The project will prepare an implementation protocol as well as gender action plan to ensure equal participation. As activities are implemented their execution will be reviewed under the protocol and gender action plan. Opportunities for additional consultation and modifications will be examined to address any gaps as par of the implementation process. A formal review process for both will take place on an annual basis to be supervised by CABEI.	WRI with CATIE's support
Human Rights *Human rights are impinged upon*	Project activities have a negative impact on human rights.	Negl.	Project management and coordination to ensure compliance. There is a human rights commission in each country with representatives that will also monitor the situation.		WRI with CATIE's support (Project coordinator in each country)
Gender Equity and Women's Empowerment *Women groups are not reached, do not participate and are not empowered in project*	The project will take place in areas where in some cases women are excluded from decision making	Medium	Community consultation has identified women groups that will be active in project activities. A Gender Action Plan has been developed to ensure that gender-focused activities will include raising awareness in the region to *inter alia*: i) acknowledge women for their contribution as an income-generating individual in the	The Gender Action Plan will be applied to all project activities. Opportunities for additional consultation and modifications will be examined to address any gaps as par of the implementation process. A formal review of the Gnder Action Plan will take place on an	WRI with CATIE's support

implementation activities			household; and ii) highlight their role in climate change adaptation. This will enhance the value of women within their communities, as well as promote their equitable participation of women in the planning, implementation, monitoring and evaluation of the project.	annual basis to be supervised by CABEI.	
Core Labor Rights *Labor rights are not respected during implementation activities, in particular in the deployment of activities under component 3.*	There is a risk of inequitable access of indigenous and minority groups to project resources and benefits	Low	Community consultation has identified indigenous minority groups in the area, which constitute most of the population and will be active in project activities, providing most of the labor required at a local level. Prior to the development of the activities, it will be necessary to train the people involved to avoid accidents at work. Each area of intervention of the project must have the data of the closest health and emergency care centers. Verify that project personnel (permanent and contracted) have medical insurance.	Most management and labor related to implementation on the ground will be carried by the local population with specific care to ensure participation of indigenous communities (maya, Garifuna and Creole). During implementation an annual review will be made of the state of labor rights and access to opportunities and benefits by the indigenous communities. Opportunities for additional consultation and modifications will be examined to address any gaps as par of the implementation process. A formal review will take place on an annual basis to be supervised by CABEI.	WRI with CATIE's support (Project coordinator in each country)
Indigenous Peoples *Indigenous peoples do not feel empowered and do not*	There is a risk of inequitable access of indigenous and minority groups to project	~~Low~~Medium	All activities have been designed for the benefit of local populations which are overwhelmingly composed of marginalized and vulnerable groups The project ~~must~~will continue to conduct consultations with the Indigenous Peoples involved	Most of the implementation on the ground will be carried by the local population with specific care to ensure participation of indigenous communities (maya, Garifuna and Creole). During implementation an annual review will be made of the access to	WRI with CATIE's support (Project coordinator in each country)

participate in project activities.	resources and benefits Some restoration measures will also take place in indigenous lands		through appropriate procedures and their representative institutions; to obtain the "Free, Prior and Informed Consent". The basis for making the queries will be as follows: • Meetings and consultations ~~must~~ will be held in the places, times, and in the languages and formats determined by the peoples themselves; • Consultation methods should recognize existing Indigenous Peoples' organizations, including councils of elders, leaders, and tribal leaders, and should pay special attention to women, youth and elders; • The consultation has a significant influence on the overall design choices of the project, eg, location and beneficiaries. • The consultation with the indigenous peoples about the project activities and their potential adverse impacts will be done based on adequate and pertinent information. Inclusive, culturally appropriate, and language-adapted communication methods will be used to disseminate project information so that members of these communities understand how the project may affect their lives.	opportunities and benefits by the indigenous communities. Opportunities for additional consultation and modifications to implementation protocols will be examined to address any gaps as part of the implementation process. A formal review will take place on an annual basis to be supervised by CABEI.	
Involuntary Resettlement	Project activities will	Negl.	There are no inhabitants in the restoration areas		Project coordinator

Local populations are displaced	take place in degraded public land (nature reserves, protected forests). There are no populations inhabiting restoration areas.				in each country
Protection of Natural Habitats *Habitats are degraded as a result of project activities*	On the ground adaptation measures are designed to restore degraded natural habitats important for adaptation to extreme weather events.	Negl.	All restoration on-the-ground activities will adhere to EIA regulations in the countries and will consist of natural regeneration, assisted natural regeneration and of planting of native species		Project coordinator in each country
Conservation of Biological Diversity *Biodiversity in project areas is negatively affected*	On the ground adaptation measures are designed to restore degraded natural habitats important for adaptation to extreme weather events.	Negl.	All restoration on-the-ground activities will adhere to EIA regulations in the countries and will consist of natural regeneration, assisted natural regeneration and of planting of native species		Project coordinator in each country

Climate Change. *Project activities result or fail to account for their consequences*	The proposed project's climate change interventions focus on reforestation of degraded forests and mangroves. None of these interventions would result in an increase in greenhouse gas emissions. On the contrary the expectation is that these activities will contribute to the augmentation of carbon sinks. The activities are being designed to strengthen adaptation to climate change consequences.	Negl	All restoration on-the-ground activities will adhere to EIA regulations in the countries and will consist of natural regeneration, assisted natural regeneration and of planting of native species		Project coordinator in each country
Pollution Prevention and Resource Efficiency *Pollution result from project*	Project activities are not expected to result in the generation of any considerable	Negl.	Implementation protocols would ensure an efficient use of resources and a minimal production of waste.		Project coordinator in each country

activities and resources are not deployed in an efficient manner	amounts of pollution, particularly hazardous or toxic waste.				
Public Health *Public health of surrounding communities is affected as a result of project activities*	Project activities will have no foreseeable adverse effects on public health.	Negl	The development of a health and safety approach would ensure no impact on public health.		WRI and Project coordinator in each country
Physical and Cultural Heritage *Cultural artifacts and practices are affected by project activities*	The project plans no construction or hard infrastructure. There is a low risk that the adaptation interventions involving could result in negative impacts on physical and cultural heritage, especially in Maya sites that may located in the restoration areas.	Low	The participatory approach to project design includes the use of local knowledge to ensure that restoration activities will not affect cultural heritage sites. The likelihood of negative impacts related to project interventions is very low.	During project implementation, any findings of cultural heritage will be notified to the National Authorities by the implementing Agency. If findings occur, the surrounding areas will be excluded from project activities and moved to other areas. On the basis of the findings if any, opportunities for adjustments in the implementation will be proposed by the Executing Agencies, reviewed by CABEI and adopted as required.	WRI and Project coordinator in each country
Lands and Soil Conservation	None of the proposed project's	Negl.	Project implementation will ensure lands and soil are protected.		Project coordinator

	activities have been identified as causing soil degradation or loss of productive lands. On the contrary, the restoration interventions consist of land restoration and soil conservation measures.				in each country

Environmental and Social Impact Assessment

The analysis conducted on environmental and social risks (detailed above) has yielded a negligible risks assessment for most measures. There are some with a low risk and only one with medium risks. Commensurate with the perceived level of risks, an environmental and social assessment has been carried out for those aspects. The results are summarized in the Table X below:

Table Summary of assessment results

Commented [LGL1]: Change Table Number.

Risk	Assessment Category	Action incorporated in the project design
Access and equity: Activities fail to meet state of the art standards And marginalized and vulnerabe groups are not reached and do not participate in project activities.	The risk has been assessed as low as . project activities have been designed in consultation with local communities with an emphasis on access and equity for women and ethnic groups. During local consultations, women and minorities had unrestricted access and contributed to the recommendations. Both in Belize and in Honduras the local institutions to be involved once the project is approved are led by women. The Gender Analysis in all countries show that women are in a position to participate but would	Project activities will be monitored for access and equity. In Belize, **all** project beneficiaries belong to ethnic minorities and 50% are expected to be women. In Guatemala, an estimated 50% of the beneficiaries belong to ethnic minorities, corresponding to their share of the population. In Honduras, likewise the local population of Garifuna around the coastal area will be direct beneficiaries of the project activities.

Gender equity	benefit of a concerted effort to guarantee participation and a role in decision making.	Dissemination ad training activities will produce materials in the local languages. Participation of women and minorities will be reported continuously during project implementation.
Core labor rights and indigenous peoples	The risk has been assessed as low as . project activities will take place in areas that are either majority (Monkey River Delta with majority Maya population and/or coastal areas with majority Garifuna population in the three countries. Even, in areas where Maya or Garifuna are not a majority (example downstream of the Cusuco area) the indigenous population represents a significant share of the total. In all areas, the consultation process revealed that minority groups would stand to gain significantly in strengthened resilience to the consequences of the intensification of extreme weather events as well as the opportunities for participation in project activities.	In all project activities, local population will be engaged in decision making and implementation. In all cases local groups will assist with the delivery of the activities to be supported by the project. A strong monitoring program would be in place to monitor the participation of indigenous and minority groups to ensure they are empowered to participate in all project activities. Corrective actions would be taken through the local implementation processes if required.
Physical and cultural heritage	During the local visits and consultations an assessment was made of the likelihood of cultural heritage being present in the project area. MRDWA leadership reported the presence of Maya artifacts in the watershed but not in the delta proper. A review conducted with National Authorities reported no Maya sites are in the area of Rio Dulce or Cusuco that will be subject to reforestation. However, the assessment recommends that care be exercised before planting processes are started to ensure that this is the case.	The project activities include a detailed survey before planting is initiated. In the case of any findings, these will be reported to the national authorities, and the sites will be replaced with adjacent areas.

D. Monitoring and evaluation

Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

The proposed project will comply with formal guidelines, protocols and toolkits issued by the AF ~~and~~ UN Environment~~~~. WRI under the aegis of CABEI will develop a **Supervision Plan** during the project's inception phase which will be distributed and presented to all stakeholders during the Inception Workshop. The emphasis of the Supervision Plan will be on outcome monitoring, learning and sustainability and financial management. Proposed project risks and assumptions will be regularly monitored by WRI. Risk assessment and rating is an integral part of the Project Progress Review (PPR). The quality of the project's M&E will also be reviewed and rated as part of the PPR. Appropriate financial parameters will be monitored annually to ensure the cost-effective use of financial resources.

The proposed project will undergo an independent **Mid-Term Review** at the mid-point of project implementation. The Mid-Term Review will determine progress being made toward the achievement of outcomes and will identify corrective actions if needed. It will: i) focus on the effectiveness, efficiency, and timeliness of project implementation; ii) highlight issues requiring decisions and actions; and iii) document initial lessons learned about project design, implementation, and management. Findings of this review will be incorporated as recommendations for improved implementation during the final half of the project's term.

An independent **Terminal Evaluation** will take place three months prior to the proposed project's end date ~~in accordance with~~ UN Environment ~~guidance~~. The Final Evaluation will focus on the delivery of the project's results as initially planned – and as corrected after the Mid-Term Evaluation, if any such correction took place. The Final Evaluation will assess the impact and sustainability of results, including their contribution to capacity development and the achievement of adaptation benefits.

An **Annual Project Progress Review** (PPR) will be prepared to monitor progress made since the project's start and in particular for the previous reporting period. The PPR includes, but is not limited to, reporting on the following:

- progress on the project's objective and outcomes – each with indicators, baseline data and end-of-project targets (cumulative).
- project outputs delivered per project outcome (annual).
- lessons learned/good practice.
- annual Work Plan and expenditure reports; and
- project risk and adaptive management.

Periodic monitoring will be conducted through visits to the intervention sites ~~undertaken by relevant staff from UN Environment~~. Visits will be jointly conducted based on the agreed schedule to assess project progress first-hand. A summary of the M&E costs (in thousand dollars) is provided in the table below:

Table 13. M&E responsibilities, budgets and timeframe

Type of M&E activity	Responsibility	Budget	Timeframe
Direct project monitoring and quality assurance	CABEI with WRI and CATIE's Assistance	Staff costs included in project execution	Half yearly reports
Evaluations (mid-term review and independent technical evaluations)	CABEI with WRI & external consultants	Staff costs included in project cycle management ~~execution~~ fee ~~and~~, including US$50,000 for an independent evaluation.	June 2023 for midterm review and at project termination
Audit		Included in management fee	Annually at year's end
Inception meeting	WRI with CATIE's assistance	Staff costs included in project execution	Within 3 months of project start-up

Table 14. Estimated project management costs (*)

Activity	Responsibility	Budget (US $)
Direct project management	Project coordination unit Project coordinator	Staff costs included in project execution
Country coordinators (one in each country)	WRI staff & external consultants, reporting directly to Project coordinator.	Staff costs included in project execution fee. Consultant costs per country: 35,000 per year. ~~Costs included in Component 3.~~
Finance and procurement assistant	WRI staff	15000 per year; included in management fee
Communication costs	WRI with CATIE's assistance	10,000 per year; included in project execution
Travel costs	WRI with CATIE's assistance	10,000 per year; included in project execution

(*) This is a regional project managed through WRI Washington and Mexico office and CATIE's Turrialba, Costa Rica office. CATIE's country offices will provide office space in capital cities, essential for all work with government and partner NGOs. No fixed additional office space will be required in the field, the project coordinators will be located in the target area. The project management will be very agile, with little if any overhead.

E. Results framework

Results framework for the program proposal, including milestones, targets and indicators.

Table 15. Results framework for the program proposal, including milestones, targets and indicators

Core Impact Indicator: Anticipated number of beneficiaries.

In Belize: direct: 250, 50% women; indirect: 800, 50% women

In Guatemala: direct 1000; indirect, 5000

In Honduras, direct: 1000; indirect: 10,000

Project outcome/ Outputs	**Outcome indicator**	**Baseline**	**Target**	**Source of Verification**	**Assumption**	**Responsibility**
Outcome 1: **Strengthened regulations, planning and policy strategies that support restoration as an adaptation measure to achieve resilience to intensifying extreme weather events.**						
1.1 Forest restoration is promoted among local, national and regional stakeholders to influence national regulatory framework, subnational land use plans and land use strategies in coastal areas	One set of adjusted regulation per country and these sets are shared between countries.	No consideration of restoration as an adaptation measure. Land planning does not consider land restoration as a solution to	Countries have reviewed applicable regulations. local authorities and communities are made aware of trends and implications.	Adjusted regulations are made public. Land planning documents are made public. Adjusted NAPs and NDCs are published.	Climate change office coordinators and land planning authorities are committed to strengthen the regulatory framework.	Executing Agencies with the support of Ministries of Environment in Honduras and Guatemala and Coastal Zone Management Authority and Institute in Belize and land planning authorities.

		Climate and Non-Climate drivers of landslides.				
1.2 Integrate data, information and results of this project into National Adaptation Plans (NAPs) and, where relevant, National Determined Contributions (NDCs	NAPs include the adaptation benefits of land restoration	NAPs NDCs do not include restoration as a meaningful measure.	NAPs and NDC if applicable reflect land use as a climate measure in the three countries	NAPs and NDCs	Land planning authorities are committed to reflect climate vulnerability in land use issues	Executing agencies working with local authorities
Outcome 2: Designed and implement 3 Local Community early warning system for improving alerts and response capacities to extreme weather events						
Output2.1: 3 Community early warning systems design responding to local needs of information and with at least one Hydro climatological impact prioritized by each System. The CEWS will be in operation and feeding information into regional Disaster Management platforms	Number of Regional information system in operation	0	One Regional information system is designed and is operated by CCCCC	Regional information system is uploaded into CCCCC website. Monitoring and evaluation reports.	CCCCC is committed to operate and maintain the system and information generated by the project is included.	Executing agencies with participation of CCCCC
Outcome 3: Increase Resilience of 3 socio –ecological landscapes in the Atlantic Forest of Belize, Guatemala and Honduras by restoring coastal water basins areas with native species and deploy forest economic activities.						
Output 3.1: Design, plan and develop enabling conditions for Increased engagement and participation of Communities and social actors in the three restoration areas in	Number of roundtable/networks	No roundtable/netwo	Three roundtable/networks in operation	Monitoring and evaluation reports.	Communities engaged.	Executing agencies through country coordinators.

degraded public lands. in coordination and cooperation, in at least one site, with corresponding investments by private partners in private land		rks in existence	50% of participants are women.			
Output 3.2: Three landscapes under restoration activities, one in each country, implementation and maintenance protocols	Number of pilots implemented	Zero adaptation pilots on the ground.	Three adaptation projects implemented in the target areas. Three adaptation projects implemented in the target areas. Adaptation activity in: Belize includes Total area: 500 ha restored, two seed collection centers, one nursery. Guatemala includes, total area 1800 ha, 3 seed collection centers and two nurseries. Honduras, 1800 ha, 4 seed collection	Monitoring and evaluation reports.	All material and labor inputs available and deployed.	Executing agencies through country coordinators.

			centers, four nurseries. 50% of all beneficiaries are women.			
Output 3.3: Wider potential for replication by the private sector examined and communicated to the Impact Investors associated to Initiative 20x20 and other financial groups	Replicability potential for the use of land restoration as an adaptation measure assessed Number of cost benefit analysis completed Pipeline of potential adaptation projects is generated with at least 3 projects	Zero assessments for replicability No projects available for financing.	Three assessments completed based on data generated through the implementation of the pilots. Three cost/ benefit analysis completed one in each pilot area One pipeline of potential adaptation projects is generated with at least 3 projects	Monitoring and evaluation reports.	Data generated by the 3.2 output. Data is collected and or is available in the literature	Executing agencies through country coordinators. Ministries of Environment in Honduras and Guatemala and Coastal Zone Authority in Belize.
Outcome 4: No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets).						
Output 4.1: Increased the knowledge and capacity for implementing restoration as an adaptation measure, in subnational and national	Number of trained individuals.	0	100 50% of trainees are women	Monitoring and evaluation reports.	Training courses are organized and held. Training reaches local communities in the project area	Executing agencies through country coordinators.

stakeholders and 50% of them should be women.	Number of institutions involved					
Output 4.2: Regional Training program, including activities implemented to shared lessons learned and a Regional Information System. promote the deployment of the benefits and structure of restoration as an adaptation measure from all representative groups of actors, including farmer organizations, women's groups, private sector, and government from local to national, private investors.in the Atlantic Forest of the Coastal Areas of Honduras Gulf and other countries that are vulnerable to hurricanes in coastal zones	Number of women lead organizations involved Number of women trained Number of impact funds participating	0 0 0 2	9 3 50 4	Monitoring and evaluation reports.		

F. Programme alignment with Adaptation Fund Results Framework

Demonstrate how the programme aligns with the Results Framework of the Adaptation Fund

Table 11. Proposed project alignment with the AF Results Framework

Project Objective(s)[50]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
strengthen the climate resilience of communities and the ecosystems in the coastal Atlantic region of Belize, Honduras and Guatemala, directly impacted by the intensification of weather events resulting from climate change, by deploying Ecosystems restoration efforts in a gender-conscious manner, providing access to community tools and training, supporting local/ community Early Warning Systems, and implementing a regional approach that enhance scaling up possibilities for Restoration Ecosystems as an adaptation measures the Gulf of Honduras	4500 ha of forest had been restored Financial damages caused by weather extremes in the region are reduced. Costs and benefits of restoration as an adaptation measure are illustrated at three sites.	Outcome 5: Increased ecosystem resilience	5. Integrity of forests and mangroves is improved and their capacity to ameliorate the consequences of extreme weather events is improved.	~~13,139,229~~12,248,121
Outcome 1. Mainstreaming Restoration as a key adaptation measure in national and local regulatory Frameworks and land use planning process for increasing resilience to intensifying extreme weather events.	At least one key regulatory instrument (local or national) in each country proposed for adjusted and a report of sharing lessons between countries policies	Output 7: Improved policies and regulations that promote and enforce resilience measures	Number, type of regulations introduced or adjusted to address climate change risks	860,000
Output 1.1 **Influence national regulatory framework and startegies**	At least one key regulatory instrument (local or national) in each country proposed for adjusted and a report of sharing lessons between countries policies	Output 7.1,Improved integration of climance resilience strategies in country development plans	Number of policies introduced or adjusted	
Outcome 2: Designed and implement 3 Local Community early warning system for improving alerts and response capacities to extreme weather events	Number of systems in place/ Number of Regional information system in operation	Output 1.1: Risk and vulnerability assessments conducted and updated	Number of systems in place/ Number of Regional information system in operation	700,000

[50] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply

Project Objective(s)[50]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Output 2.1 Three Community early warning systems designed and implemented responding to local needs of information and with at least one Hydro climatological impact prioritized by each System.	Warning systems designed and in operation and beneficiaries covered	Fund Output:1.1 Risk and vulnerability assessments conducted and updated	Number of early warning systems and beneficiaries covered	
Outcome 3. Increase Resilience of 3 socio –ecological landscapes in the Atlantic Forest of Belize, Guatemala and Honduras by restoring coastal water basins areas with native species and deploy forest economic activities.	4500 Ha restored improving resilience for 150000 people. .	Output 5 Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)	~~9.040.000~~8,490,000
Outcome 4: Improved knowledge and skills among actors at local, national and regional levels to scale up restoration as an adaptation activity and build regional exchange platforms.	At least 100 people are aware of predicted adverse impacts of climate change, and of appropriate response	Output 3 Targeted population groups participating in adaptation and risk awareness activities.	Number and type of risk reduction actions	1,000,000
	One Training program and two websites with technical information available and One Regional Information System in place and with the participation of actors in three countries.	Output 2.1 Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events.	Capacity of staff to respond to, and mitigate impacts of, climate-related events.	

G. Budget

Detailed budget with budget notes broken down by country as applicable, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs (in thousands of dollars).

Expected Outcome	Expected Output	Output budget (US$)	Activity	Budget Notes	Y1 (US$)	Y1 (US$)	Y1 (US$)	Y1 (US$)	Y1 (US$)	Total (US$)
Component 1: Mainstreaming Restoration as a key adaptation measure in national and local regulatory Frameworks and land use planning process for increasing resilience to intensifying extreme weather events.										**860.000**
Outcome 1: Strengthened regulations, planning and policy strategies that support restoration as an adaptation measure to achieve resilience to intensifying extreme weather events.	**Output 1.1:** Forest restoration is promoted among local, national, and regional stakeholders to influence national regulatory framework, subnational land use plans and land use strategies in coastal areas	600.000	Activity 1.1.1 Undertake a regulatory review to select the key regulatory instruments in each country to update for increase the deployment of restoration as adaptation measures, as well as a comparative exchange of information on regulatory approaches between the three countries	1	2,000					**2,000**
				2	6,000	6,000	6,000	6,000	6,000	**30,000**
				3		24,000	24,000	12,000		**60,000**
				4		24,000	24,000	12,000		**60,000**
				5		24,000	24,000	12,000		**60,000**
				6				12,000		**12,000**
				7			30,000			**30,000**
				8		3,000	3,000	3,000		**9,000**
				9	10,000	10,000	15,000			**35,000**
				10		500	500	500	500	**2,000**
			Activity 1.1.2: Workshops, work meetings to update relevant public documents including regional land planning and strategies with the participation of local authorities and communities with equal participation of women including specific outreach to women groups	11	20,000					**20,000**
				12		14,000	14,000	14,000		**42,000**
				13		14,000	14,000	14,000		**42,000**
				14		14,000	14,000	14,000		**42,000**
				15		500	500	500	500	**2,000**
				16		20,000				**20,000**
				17			30,000			**30,000**
				18			30,000			**30,000**
				19			30,000			**30,000**
				20		10,000	10,000	10,000	4,000	**34,000**
				21		4,000	4,000			**8,000**
	Output 1.2: Integrate data, information and results of this project into National Adaptation Plans (NAPs) and, where relevant, National Determined Contributions (NDCs).	260.000	Activity 1.2.1. Work meetings with national, local authorities and communities, with outreach to women groups to facilitate identification by national adaptation authorities and climate change offices of suggested adjustments and revisions to NAPs and NDCs.	22		3,000	3,000	3,000		**9,000**
				23		3,000	3,000	3,000		**9,000**
				24		3,000	3,000	3,000		**9,000**
				25		5,000	5,000	5,000	5,000	**20,000**
				26		10,000	10,000	10,000	10,000	**40,000**
				27		6,000	6,000	6,000		**18,000**
				28	12,000	12,000	12,000	12,000	12,000	**60,000**
				29			15,000			**15,000**
				30		20,000	20,000	20,000		**60,000**
				31		10,000		10,000		**20,000**

Expected Outcome	Expected Output	Output budget (US$)	Activity		Y1 (US$)	Y2 (US$)	Y3 (US$)	Y4 (US$)	Y5 (US$)	Total (US$)
Component 2: Implementing adaptation measures in selected Landscapes of the Atlantic Forest										**9.040.000**
Outcome 2: Designed and implement 3 Local Community early warning system for improving alerts and response capacities to extreme weather events	**Output 2.1:** 3 Community early warning systems design responding to local needs of information and with at least one Hydro climatological impact prioritized by each System. The CEWS will be in operation and feeding information into regional Disaster Management platforms	700.000	Activity 2.1.1 Detailed risk and impact analysis will be conducted. If necessary, adjustments to the areas to be intervened will be made.	32	50,000	100,000				**150,000**
			Activity 2.1.2 Design of 3 local regional community warning system reliant on remote sensing imagery, on the ground sensors and modeling.	33	40,000	40,000				**80,000**
				34	50,000	50,000	20,000			**120,000**
				35	15,000	60,000	60,000	15,000		**150,000**
			Activity 2.2.3 Identification of connectivity requirements with national meteorological services and local climate information systems and municipalities response systems	36		30,000	40,000	10,000		**80,000**
			Activity 2.1.5 Training events on community early warning information systems are delivered in each project landscape to communities, project participants and authorities.	37		10,000	30,000	15,000		**55,000**
			Activity 2.1.4. Design and delivering Protocols and Guidelines for collecting information based in community alert system and improve coordination between the local and the national EWS to generate effective action	38			30,000	30,000	30,000	**90,000**

Expected Outcome	Expected Output	Output budget (US$)	Activity		Y1 (US$)	Y2 (US$)	Y3 (US$)	Y1 (US$)	Y1 (US$)	Total (US$)
Component 2: Implementing adaptation measures in selected Landscapes of the Atlantic Forest										**9.040.000**
Outcome 3: Increase Resilience of 3 socio –ecological landscapes in the Atlantic Forest of Belize, Guatemala and Honduras by restoring coastal water basins areas with native species and deploy forest economic activities.	**Output 3.1**: Design, plan and develop enabling conditions for Increased engagement and participation of Communities and social actors in the three restoration areas in degraded public lands. in coordination and cooperation, in at least one site, with corresponding investments by private partners in private land	970.000	Activity 3.1.1 Identification and evaluation of restoration options as adaptation measures in the pilot areas and between the 3 nations; under this activity the detailed implementation details of the restoration work will be identified and cost for implementation in the target areas. (Community actors, including women)	39	20,000	30,000				**50,000**
				40	20,000	30,000				**50,000**
				41	20,000	30,000				**50,000**
			Activity 3.1.2 Detailed Vulnerability assessment and resilience results framework expected from interventions should be worked with the participation of local communities.	42	150,000					**150,000**
			Activity 3.1.3. Ex-ante cost and benefits analysis for the selected option at a feasibility level. The analysis will include costing of all elements of the project in the specific areas selected.	43		60,000	30,000			**90,000**
				44		60,000	30,000			**90,000**
				45		60,000	30,000			**90,000**
				46			20,000			**20,000**
				47		5,000	5,000			**10,000**
			Activity 3.1.4 Review social vulnerability in the area of influence of the pilots, taking into account gender balance.	48	20,000	30,000				**50,000**
				49	20,000	30,000				**50,000**
				50	20,000	30,000				**50,000**
			Activity 3.1.5. Develop a methodology to assess, gender conscious social engagement in the implementation of project activities	51	45,000	65,000				**110,000**
				52	70,000					**70,000**
				53	20,000	20,000				**40,000**
	Output 3.2: Three landscapes under restoration activities, one in each country, implementation and maintenance protocols.	US$ 6.825.000,00	Activity 3.2.1: Implement the methodology for engagement specific vulnerable groups in the project activities.	54		40,000				**40,000**
				55		40,000				**40,000**
				56		50,000				**50,000**
				57		20,000				**20,000**
			Activity 3.2.2: Convene and Support the consolidation of a gender balanced local restoration roundtable/network in each pilot area to host training events.	58	5,000	10,000	10,000	10,000		**35,000**
				59		5,000	5,000			**10,000**
				60	10,000	10,000	10,000	15,000	10,000	**55,000**
			Activity 3.2.3: Restoration of public coastal areas through reforestation	61			50,000			**50,000**
				62			1,000,000	1,000,000	120,000	**2,120,000**

Expected Outcome	Expected Output	Output budget (US$)	Activity		Y1 (US$)	Y2 (US$)	Y3 (US$)	Y1 (US$)	Y1 (US$)	Total (US$)
Component 2: Implementing adaptation measures in selected Landscapes of the Atlantic Forest										**9.040.000**
			with native species in the Cerro San Gil Reserve in Guatemala, the Monkey River Delta and Watershed Riparian areas in Belize and Cusuco National Park and buffer areas in the Sierra del Merendón Municipal Reserve in Honduras and associated mangrove areas.	63			50,000			**50,000**
				64			1,000,000	1,000,000	120,000	**2,120,000**
				65			40,000			**40,000**
				66			1,000,000	1,000,000	120,000	**2,120,000**
			Activity 3.2.4 Design and implement a monitoring program to determine impacts, costs and benefits of adaptation to intensifying extreme weather events through restoration of coastal landscapes and ecosystems and report on results	67					25,000	**25,000**
				68					25,000	**25,000**
				68					25,000	**25,000**
	Output 3.3: Wider potential for replication by the private sector examined and communicated to the Impact Investors associated to Initiative 20x20 and other financial groups.	US$ 695.000,00	Activity 3.3.1 Preparation of guidelines for implementation of cost-effective adaptation-through-restoration options for the Atlantic coast ecosystems.	69	20.000	60.000				**80.000**
				70	5.000	5.000				**10.000**
				71		10.000				**10.000**
			Activity 3.3.2 Design and analysis of the Plan for transition livelihoods to a more sustainable economic activities through implementing restoration economies in the areas of the project implementation.	72		100.000	100.000	60.000	60.000	**320.000**
			Activity 3.3.3. Summary report of impact and financial benefits of forest restoration-based adaptation in coastal zones.	73					10.000	**10.000**
				74					15.000	**15.000**
			Activity 3.3.4: Preparation of a pipeline of restoration projects using the experience gathered with the three pilots and dissemination of the pipeline to the wider impact investor community under Initiative 20x20 and other potential sources of funding	75			10.000	40.000		**50.000**
				76				15.000	20.000	**35.000**
				77			10.000	40.000		**50.000**
				78				15.000	20.000	**35.000**
				79			10.000	40.000		**50.000**
				80				10.000	20.000	**30.000**

Expected Outcome	Expected Output	Output budget (US$)	Activity		Y1 (US$)	Y2 (US$)	Y3 (US$)	Y1 (US$)	Y1 (US$)	Total (US$)
Component 2: Implementing adaptation measures in selected Landscapes of the Atlantic Forest										**9.040.000**
Component 3: Capacity building, Knowledge & Information dissemination at local, national and regional levels										**1.000.000**
Outcome 4: Improved knowledge and skills among actors at local, national and regional levels to scale up restoration as an adaptation activity and build regional exchange platforms.	**Output 4.1**. Increased the knowledge and capacity for implementing restoration as an adaptation measure, in subnational and national stakeholders and 50% of them should be Women.	US$ 450.000	Activity 4.1.1 Conduct a participatory identification of gender-conscious capacity building needs in priority landscapes in all three countries.	82	20.000	20.000				**40.000**
				83	20.000	20.000				**40.000**
				84	20.000	20.000				**40.000**
				85	5.000	5.000				**10.000**
				86	10.000	10.000				**20.000**
			Activity 4.1.2 Prepare cross-project, country-specific and landscape-specific capacity-building plans for government staff, communities and technical assistance professionals in the field.	87		10.000	30.000			**40.000**
				88		10.000	30.000			**40.000**
				89		10.000	30.000			**40.000**
				90			10.000	20.000		**30.000**
			Activity 4.1.3 Implement capacity-building plans through regional and local workshops, field courses, hands-on learning in the execution of project activities among government staff.	91			30.000	10.000		**40.000**
				92			30.000	10.000		**40.000**
				93			30.000	10.000		**40.000**
				94			30.000			**30.000**

Expected Outcome	Expected Output	Output budget (US$)	Activity		Y1 (US$)	Y2 (US$)	Y3 (US$)	Y4 (US$)	Y5 (US$)	Total (US$)
Component 3: Capacity Building, Knowledge & Information Dissemination at local, national & regional levels										**1.000.000**
Outcome 4: Improved knowledge and skills among actors at local, national and regional levels to scale up restoration as an adaptation activity and build regional exchange platforms.	**Output 4.2.** Regional Training program, including activities implemented to shared lessons learned and a Regional Information System. promote the deployment of the benefits and structure of restoration as an adaptation measure from all representative groups of actors, including farmer organizations, women's groups, private sector and government from local to national, private investors	US$ 300.000	Activity 4.2.1 Design an International Training program to expand learning and capacity development among other 20x20 countries in Central America	93		50,000				**50,000**
			Activity 4.2.2: Three workshops including people form the three countries implementing restoration activities, involving all actors are conducted: i) at second year of project to share kickstarted project activities on adaptation~~i) at project inception to share project goals and plans~~, ii) after three years for ~~the evaluation of~~ showcasing progress and engagement, and iii) at before project termination to disseminate lessons learned and tools~~for the evaluation of achievements~~.	94		10,000		15,000	5,000	**30,000**
				95		10,000		15,000	5,000	**30,000**
				96		10,000		15,000	5,000	**30,000**
				97		15,000		25,000	20,000	**60,000**
			Activity 4.2.3: Upload Information generated by the project, including from private partners and communities into the 20x20 website and CCCCC website, other social platforms and is shared through institutional communications tools such as newsletters and blogs.	98	5,000	5,000	10,000	10,000	10,000	**40,000**
				99		5,000	5,000	5,000	5,000	**20,000**
				100		5,000	5,000	5,000	5,000	**20,000**
				101		5,000	5,000	5,000	5,000	**20,000**
	Output 4.3: Regional information system focused on land use-based responses information related to the intensification of extreme weather events in coastal zones (managed by the CCCCC)	US$ 250.000	Activity 4.3.1 Design a regional exchange information scheme for provision of information and exchange of experiences on responses and results	102	10,000		10,000		25,000	**45,000**
				103	4,000		4,000			**8,000**
				104		30,000	23,000	6,000		**59,000**
				105			4,000	4,000		**8,000**
				106	4,000	4,000	4,000	4,000	25,000	**41,000**
				107				4,000	25,000	**29,000**
			Activity 4.3.2. Update of the 20x20 website, CCCCC website and other social media tools with technical information and guidelines for adaptation through restoration in coastal areas.	108	10,000	15,000	15,000	15,000	10,000	**65,000**
				109		2,000	4,000	4,000		**10,000**
				110		5,000	5,000	5,000	15,000	**30,000**

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Project Execution Costs										
Project Execution Costs		1,160,250	Driect project execution (includes M&E from the EE)		190,000	190,000	170,000	130,000	130,250	**810,250**
			Country coordinators		35,000	35,000	35,000	35,000	35,000	**175,000**
			Finance and Procurement		15,000	15,000	15,000	15,000	15,000	**75,000**
			Communications		10,000	10,000	10,000	10,000	10,000	**50,000**
			Travel		10,000	10,000	10,000	10,000	10,000	**50,000**
Project Cycle Management Fee		1,037,871	Driect project management		150,000	150,000	150,000	150,000	150,000	**750,000**
			Inception Workshop		20,000	-	17,871	-	-	**37,871**
			Travel		20,000	20,000	20,000	20,000	20,000	**100,000**
			M&E, Independent Evaluation		-	-	50,000	-	50,000	**100,000**
			M&E, Independent Evaluation		10,000	10,000	10,000	10,000	10,000	**50,000**
Project Management Costs (9.5%)					260,000	260,000	240,000	200,000	200,250	**1,160,250**
Project Cycle Management Fee charged by the Implementing Entity (8.5%)					210,000	210,000	210,000	205,000	202,871	**1,037,871**
Total					1,688,000	2,516,000	5,151,871	4,464,000	1,626,371	**15,446,242**

Field Code Changed

Budget Notes

#	Descriptions	Budget notes
Outcome 1		
1	Regulation review kick-off meeting - WRI and CATIE	Project coordinators, country coordinators as well as involved teams from CATIE and WRI meet to kickstart policy review activity,
2	Travel - Project management	Cost will allow the management team to convene with country representatives to plan for the project's execution,
3	Workshops - CATIE (Belize)	Workshops are held in country convening local and national authorities involving the participation of community representatives, They will be carried out for the: - Policy review - Presentation of results to national authorities - Presentation of analysis and recollection of adjustments and revisions, In the policy review, at least four workshops will be held in the country, The project budgets $10,000 per workshop in all countries, Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process, The project budgets $2,000 per workshop per country,
5	Workshops - CATIE (Honduras)	Workshops are held in country convening local and national authorities involving the participation of community representatives, They will be carried out for the: - Policy review - Presentation of results to national authorities - Presentation of analysis and recollection of adjustments and revisions, In the policy review, at least four workshops will be held in the country, The project budgets $10,000 per workshop in all countries, Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process, The project budgets $2,000 per workshop per country,
6	Workshop - CATIE (Regional)	Workshops are held in country convening local and national authorities involving the participation of community representatives, They will be carried out for the: - Policy review - Presentation of results to national authorities - Presentation of analysis and recollection of adjustments and revisions, In the policy review, at least four workshops will be held in the country, The project budgets $10,000 per workshop in all countries, Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process, The project budgets $2,000 per workshop per country,
7	Gap analysis support consultancy - Local specialists	Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process, The project budgets $2,000 per workshop per country,
8	Assessment of experiences of similar measures	Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process,

		The project budgets $2,000 per workshop per country,
9	National Consultancies -	Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process,
10	Printing materials	Workshops will require participation from community representatives and from other regional organizations, These participants are considered for all workshops to ensure an inclusive policy review process, The project budgets $2,000 per workshop per country,
11	Regional Consultancy - International policy review (restoration in adaptation policy)	The regional consultancy will focus in assessing the role that ecosystem-based adaptation and restoration in coastal ecosystems has played in adaptation plans across different regions, The consultancy's product will serve as reference for all three countries that will be kickstarting processes to integrate restoration in their adaptation plans,
12	Policy review workshops - CATIE (Belize)	Workshops will enable to assess the state of EbA and restoration as a means to increase resilience, The workshops will also adopt a progressive agenda that enables feedback between the project and representatives from communities and authorities, To ensure community engagement, the workshop cost contemplates travel cost for community representatives,
13	Policy review workshops - CATIE (Guatemala)	Workshops will enable to assess the state of EbA and restoration as a means to increase resilience, The workshops will also adopt a progressive agenda that enables feedback between the project and representatives from communities and authorities, To ensure community engagement, the workshop cost contemplates travel cost for community representatives,
14	Policy review workshops - CATIE (Honduras)	Workshops will enable to assess the state of EbA and restoration as a means to increase resilience, The workshops will also adopt a progressive agenda that enables feedback between the project and representatives from communities and authorities, To ensure community engagement, the workshop cost contemplates travel cost for community representatives,
15	Printing materials - Policy pathways	Printing materials will share information on policy influencing resilience in coastal ecosystems,
16	Gender-focused community consultations	Gender-focused community consultations will assess risk exposure to extreme weather events, effect of existing land use planning, It will also enable to capture communities decision-making process in the use of land,
17	National Consultancy - Adaptation data availability and protocol development (Belize)	The consultancy will allow to identify relevant public documents including regional land planning and strategies and how restoration plays a role as an adaptation method within them, The consultancy will reflect the role of restoration within them and define and suggest a protocol to be adopted to incorporate the adaptation dimension as input data in the land use plans,
18	National Consultancy - Adaptation data availability and protocol development (Guatemala)	The consultancy will allow to identify relevant public documents including regional land planning and strategies and how restoration plays a role as an adaptation method within them, The consultancy will reflect the role of restoration within them and define and suggest a protocol to be adopted to incorporate the adaptation dimension as input data in the land use plans,

19	National Consultancy - Adaptation data availability and protocol development (Honduras)	The consultancy will allow to identify relevant public documents including regional land planning and strategies and how restoration plays a role as an adaptation method within them, The consultancy will reflect the role of restoration within them and define and suggest a protocol to be adopted to incorporate the adaptation dimension as input data in the land use plans,
20	Travel - Meeting of partners developing partner protocols	Travel costs will enable consultants and partners to meet and discuss the consultancies' approach,
21	Regional Meeting - Partners and consultants meeting	The management team, country representatives and consultants meet to discuss data collection and methodology to define a protocol with the objective of creating synergies in the project,
22	Working meetings (Belize)	Working meeting will engage national and local country authorities, country coordinators, community group representatives and regional consultant (Technical Adaptation Policy Advisor), where relevant, to facilitate identification of adjustments and revisions to NAPs and NDCs,
23	Working meetings (Guatemala)	Working meeting will engage national and local country authorities, country coordinators, community group representatives and regional consultant (Technical Adaptation Policy Advisor), where relevant, to facilitate identification of adjustments and revisions to NAPs and NDCs,
24	Working meetings (Honduras)	Working meeting will engage national and local country authorities, country coordinators, community group representatives and regional consultant (Technical Adaptation Policy Advisor), where relevant, to facilitate identification of adjustments and revisions to NAPs and NDCs,
25	Travel - Policy experts	Travel costs will allow WRI, CATIE to enable an interaction with representatives from the Global Commission on Adaption and representatives from other groups that may aide in the process of policy revision within the region,
25	Travel - Authorities and community members for exchange across country meetings	Travel costs will allow the inclusion of community groups in dialogues and meetings relating to the consideration of EbA activities in the adaptation policies (NDCs and NAPs),
26	Policy Committee meeting	
27	Regional Consultant - Technical Adaptation Policy Advisor	Within this role, the consultant will gather progress on this component throughout the duration of the project, The consultant will coordinate with WRI and CATIE country representatives to ensure progress on information gathering, policy change, gaps, synergies - and change in the regulatory framework overall,
28	Consultancy - Support in a draft proposal for consideration of authorities,	Based on the policy review, results from meetings and consultations, input form experts and data gathered by the technical adaptation policy advisor, this consultancy will draft recommendations for policy to integrate restoration as an adaptation measure in all three countries,
31	Regional meeting with climate change offices	Cost covers coordination of meeting with climate change authorities and other government representatives to reflect progress on Output 1,3 and assess feasibility and political support for policy change,

32	Consultancies - Regional climate and hydrology specialists	The analyses will be carried out in the span of two years towards the beginning of the project to provide as much information as possible on the project sites to the executing team, communities, authorities and other collaborating parties,
33	Consultancy - System inputs (data and technological components) identification and modeling (specific to flooding)	Consultant will work with the CCCCC to gather reliable and readily available meteorological data, models, and platforms to use as input in the information system,
34	Consultancy - Connectivity requirements with meteorological services and climate information systems,	The consultancy will focus in interlinking new data gathered and messages produced with existing meteorological services and other national or international sources of information,
35	Procurement of required system inputs	Costs from the purchase or access to information provision of information that will allow to construct and consistently run the system,
36	Consultancy - System design	A team of developers and designers will design the design system to ensure its usability among its target audience,
37	Workshops - Testing by authorities and communities	Workshops will allow to test and gather feedback on the system's usability by the targeted user group and other stakeholders,
38	Consultancies - Determination of maintenance protocols and upkeep,	A consultancy will allow to determine maintenance protocols, carry these out in collaboration with local authorities and then hand off to ensure permanence and sustainability of system,
39	National Consultancy - Identification of opportunities in Belize	Consultancy for scrutinizing the restoration alternatives within the identified pilot areas, The consultancy will include be comprised of cost assessments with data and will be done at pre-feasibility level,
40	National Consultancy - Identification of opportunities in Guatemala	Consultancy for scrutinizing the restoration alternatives within the identified pilot areas, The consultancy will include be comprised of cost assessments with existing data and will be done at pre-feasibility level,
41	National Consultancy - Identification of opportunities in Honduras	Consultancy for scrutinizing the restoration alternatives within the identified pilot areas, The consultancy will include be comprised of cost assessments with existing data and will be done at pre-feasibility level,
43	National Consultancy - CBA in Belize	Cost-benefit analyses will be conducted with selected cost-effective project concepts, The analyses will integrate the required involvement from communities to ensure the assessed projects deliver adaptation benefits to these groups,
44	National Consultancy - CBA in Guatemala	Cost-benefit analyses will be conducted with selected cost-effective project concepts, The analyses will integrate the required involvement from communities to ensure the assessed projects deliver adaptation benefits to these groups,
45	National Consultancy - CBA in Honduras	Cost-benefit analyses will be conducted with selected cost-effective project concepts, The analyses will integrate the required involvement from communities to ensure the assessed projects deliver adaptation benefits to these groups,
46	Consultancy - WRI leads systematization of investment options between all three countries	With the support of local partners or consultants, WRI will systematize restoration opportunities and their profiles to facilitate future involvement of impact investments who are in alignment to adaptation outcomes,

47	Travel	Cost will allow the management team to connect the identified opportunities with investors and ensure the alignment project targets,
48	Project consultancies and workshops - Social vulnerability assessments (project in Belize)	Cost of a review of social vulnerabilities with particular emphasis on the role of gender in the pilot areas,
49	Project consultancies and workshops - Social vulnerability assessments (project in Guatemala)	Cost of a review of social vulnerabilities with particular emphasis on the role of gender in the pilot areas,
50	Project consultancies - Social vulnerability assessments (project in Honduras)	Cost of a review of social vulnerabilities with particular emphasis on the role of gender in the pilot areas,
51	Consultancies - Draft a methodology for gender implementation	National consultancies will be carried out to define safeguards and pathways for engagement gender issues across the project, with special attention to the component on implementation of adaptation pilots,
53	Workshop - Technical methodology review	Workshop will allow for the review and sharing of the methodology by the project partners and other consultants carrying out activities,
54	Workshops - Introduction and training of methodology (Belize)	The methodology to be adopted will be presented in country to authorities, communities, additional consultants, project developers and other stakeholders to ensure that all stakeholders involved in the project adhere by a shared framework on gender-conscious social engagement,
55	Workshops - Introduction and training of methodology (Guatemala)	The methodology to be adopted will be presented in country to authorities, communities, additional consultants, project developers and other stakeholders to ensure that all stakeholders involved in the project adhere by a shared framework on gender-conscious social engagement,
56	Workshops - Introduction and training of methodology (Honduras)	The methodology to be adopted will be presented in country to authorities, communities, additional consultants, project developers and other stakeholders to ensure that all stakeholders involved in the project adhere by a shared framework on gender-conscious social engagement,
57	Travel - Project management team	The project management team will travel as required to ensure uptake and use of methodology by all stakeholders engaged in the project implementation,
58	Workshops - Communities	The workshops will allow the restoration network to convene and formalize in all three countries and are key to highlight the risks of extreme weather events and bring awareness to the communities in the pilot sites - with consideration of gender-inclusive participation, The networks will also link communities to the information system and disseminate and normalize its use,
59	Travel - Exchange visits	Exchange visits will allow consultants, the project management team and other experts to gain contact with the network as needed and showcase the use and functioning of other information systems in increasing resilience and preparedness to extreme weather events,
60	Consultancies - Gender specialists	Consultancies in all three countries will track and monitor equal ownership and engagement by the project's activities,
61	Prospecting workshop and engagement in Belize	With special attention to social and environmental safeguards, the country director and country team will carry out workshops, engagement efforts and visits to coordinate and agree on the project's implementation,

62	Project development in Belize	Initial investments are disbursed to support establishing the foundation of each project, Costs to be covered in these first periods include establishment of nurseries or greenhouses, trainings to build local partner's or communities' capacity to carry out germination, planting and maintenance of project,
63	Prospecting workshop and engagement in Guatemala	With special attention to social and environmental safeguards, the country director and country team will carry out workshops, engagement efforts and visits to coordinate and agree on the project's implementation,
64	Project development in Guatemala	Initial investments are disbursed to support establishing the foundation of each project, Costs to be covered in these first periods include establishment of nurseries or greenhouses, trainings to build local partner's or communities' capacity to carry out germination, planting and maintenance of project,
65	Prospecting workshop and engagement in Honduras	With special attention to social and environmental safeguards, the country director and country team will carry out workshops, engagement efforts and visits to coordinate and agree on the project's implementation,
66	Project development in Honduras	Initial investments are disbursed to support establishing the foundation of each project, Costs to be covered in these first periods include establishment of nurseries or greenhouses, trainings to build local partner's or communities' capacity to carry out germination, planting and maintenance of project,
67	Consultancy - Monitoring of projects (Belize)	The costs of tracking the project's performance and impacts in increased resilience to extreme weather events,
68	Consultancy - Monitoring of projects (Guatemala)	The costs of tracking the project's performance and impacts in increased resilience to extreme weather events,
69	Consultancy - Monitoring of projects (Honduras)	The costs of tracking the project's performance and impacts in increased resilience to extreme weather events,
74	Consultancy - Report on monitored impacts on resilience and economic benefits	Synthesis of monitoring methodologies and consolidation of up to date results and impacts from all projects within the region,
75	Workshop - Presentation to communities and local authorities	Workshops will convene local community groups to showcase results and communicate change in terms of resilience as a result from best practices, The workshop will seek to gather feedback on engagement with the project and pending needs on adaptation that may be addressed by the project under development or alternative avenues,
81	Consultancy - Survey of capacity-building needs (Belize)	The consultancy will focus in determining capacity-building needs on restoration as a means of adaptation and resilience building in the project's area. Based on the initia assessment for needs, the consultant team will produce a capacity building agenda and suggest inputs and approaches to its delivery. Catie will supervise the work of the consultant
82	Consultancy - Survey of capacity-building needs (Guatemala)	The consultancy will focus in determining capacity-building needs on restoration as a means of adaptation and resilience building in the project's area. Based on the initia assessment for needs, the consultant team will produce a capacity building agenda and suggest inputs and approaches to its delivery. Catie will supervise the work of the consultant

83	Consultancy - Survey of capacity-building needs (Honduras)	The consultancy will focus in determining capacity-building needs on restoration as a means of adaptation and resilience building in the project's area. Based on the initia assessment for needs, the consultant team will produce a capacity building agenda and suggest inputs and approaches to its delivery. Catie will supervise the work of the consultant
84	Regional Workshops - Kickoff meeting and results exchange	The workshops will allow the lead consultants from each country to meet and to discuss and adhere to assessment guidelines as defined by the project manangement team and experts on community engagement, gender, adaptation and capacity building.
85	Travel - Project management team	Travel costs to ensure the project management team's participation and oversight of integration of gender-consideration's in the assessment and project deliverables.
86	Consultancy - Development of capacity-building plans and socialization (Belize)	Following the delivery of activity 4.1.1 (inputs), a consultant team will develop cross-project, country-specific and landscape-specific capacity-building plans. The consultant will coordinate with experts for the appropriate content development and expert engagement to deliver the capacity building at the right scale.
87	Consultancy - Development of capacity-building plans and socialization (Guatemala)	Following the delivery of activity 4.1.1 (inputs), a consultant team will develop cross-project, country-specific and landscape-specific capacity-building plans. The consultant will coordinate with experts for the appropriate content development and expert engagement to deliver the capacity building at the right scale.
88	Consultancy - Development of capacity-building plans and socialization (Honduras)	Following the delivery of activity 4.1.1 (inputs), a consultant team will develop cross-project, country-specific and landscape-specific capacity-building plans. The consultant will coordinate with experts for the appropriate content development and expert engagement to deliver the capacity building at the right scale.
89	Consultancy - Implementation of capacity-building plans (Belize)	With oversight from CATIE, consultancy will lead capacity building plans in the project areas.
90	Consultancy - Implementation of capacity-building plans (Guatemala)	With oversight from CATIE, consultancy will lead capacity building plans in the project areas.
91	Consultancy - Implementation of capacity-building plans (Honduras)	With oversight from CATIE, consultancy will lead capacity building plans in the project areas.
92	Travel - Exchange of practice among community memebers	Travel costs to ensure particiaption and exchange of community representatives in international courses on restoration with a focus on adaptation.
93	Consultancy - CATIE	CATIE leads the design, content and delivery of a training program on the topic of community engagement and restoration for increasing resilience. The training program will be made available to other stakholders within the three countries and within the borader audience engaged in restoration in Latin America and the Caribbean. The training will bring restoration under focus to increase resilience to intensifying weather events.

94	National workshops - Kickoff meeting and results exchange (Belize)	National workshops - Kickoff meeting and results exchange (Belize)
95	National workshops - Kickoff meeting and results exchange (Guatemala)	National workshops - Kickoff meeting and results exchange (Guatemala)
96	National workshops - Kickoff meeting and results exchange (Honduras)	National workshops - Kickoff meeting and results exchange (Honduras)
97	Travel - Project management team, country offices representatives and key local specialists	Travel - Project management team, country offices representatives and key local specialists
98	Regional consultancy - Online platform development	Regional consultancy - Online platform development
99	Consultancy - National communication engagement (Belize)	Consultancy - National communication engagement (Belize)
100	Consultancy - National communication engagement (Guatemala)	Consultancy - National communication engagement (Guatemala)
101	Consultancy - National communication engagement (Honduras)	Consultancy - National communication engagement (Honduras)

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H. Disbursement schedule

Include a disbursement schedule with time-bound milestones.

Table 13. Disbursement schedule

	Upon Agreement Signature (US$)	End of year 1	End of Year 2	End of year 3	End of year 4	Total
Schedule date (tentative)	**June 2022**					
Project Funds	758,000 ~~903.000~~	1,606,000 ~~1.476.000~~	4,214,000 ~~4.249.000~~	3,679,000 ~~3.684.500~~	793,000 ~~737.500~~	11.050.000
Project execution costs	260,000 ~~94.815~~	260,000 ~~154.980~~	240,000 ~~446.145~~	200,000 ~~386.873~~	200,250 ~~77.438~~	1.160.250
Implementing Agency Fee	210,000 ~~84.814~~	210,000 ~~138.633~~	210,000 ~~399.087~~	205,000 ~~346.067~~	202,871 ~~69.270~~	1.037.871
Total	1,228,000 ~~1.082.629~~	2,076,000 ~~1.769.613~~	4,664,000 ~~5.094.232~~	4,084,000 ~~4.417.439~~	1,196,121 ~~884.207~~	**13.248.121**

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[51]

Mr. Joseph Waight Financial Secretary Ministry of Finance, Government of Belize	Date*: January 2, 2022*
Eng. Elvis Yovanni Rodas, Secretary of State. Secretary of Natural Resources and Environment. Republic of Honduras	Date*: January 7, 2022*
Lic. Mario Roberto Rojas, Minister of Environment and Natural Resources. Republic of Guatemala	Date*: January 4, 2022*

Commented [LGL2]: UPDATE WITH INFO FROM NEW ENDORSEMENT LETTERS

B. Implementing agency certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (……list here…..) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/program in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/program.	
Name & Signature Implementing Entity Coordinator	
Date: *(Month, Day, Year)*	Tel. and email:
Project Contact Person:	
Tel. And Email:	

[51] 6. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programs proposed by the implementing entities.

GOVERNMENT OF BELIZE

Ministry of Finance
Belmopan, Belize

C/GEN/120/01/22 (11) Vol. I

4th January 2022

The Adaptation Fund Board
c/o the Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Dear Sir/Madam,

Subject: Endorsement for the Regional Proposal: Increasing Climate Resilience through Restoration of Degraded Landscapes in the Atlantic Region of Central America.

In my capacity as designated authority for the Adaptation Fund in Belize, I confirm that the above regional project proposal is in accordance with the government´s priorities in implementing adaptation activities to reduce risks and adverse impacts of climate change in the region.

I am pleased to reiterate our commitment to the above project proposal with support from the Adaptation Fund. I am also pleased to support CABEI (Central American Bank for Economic Integration) as the implementing agency for the project and the World Resources Institute (WRI) and the Tropical Agricultural Research and Higher Education Center (CATIE) as executing agencies.

Sincerely,

MINISTRY OF FINANCE
BELMOPAN BELIZE

(JOSEPH WAIGHT)
Financial Secretary

c: Chief Executive Officer, Ministry of Sustainable Development, Climate Change and Disaster Risk Management
Chief Climate Change Officer, National Climate Change Office
Chief Forest Officer, Forest Department

Ministro

MINISTERIO DE AMBIENTE Y RECURSOS NATURALES
GUATEMALA, C.A.

January 12, 2022
Oficio MI-018-2022/MRRE-gpvg

Letter of Endorsement by Government

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for the project Use of Nature-based Solutions to Increase Resilience to Extreme Climate Events in the Atlantic Region of Central America

In my capacity as designated authority for the Adaptation Fund in Guatemala, I confirm that the above regional programmer proposal is in accordance with the government's priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the region.

Accordingly, I am pleased to endorse the above programme proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Central American Bank for Economic Integration (CABEI), and executed by the World Resources Institute WRI and the Tropical Agricultural Research and Higher Education Center CATIE.

Sincerely,

Lic. Mario Roberto Rojas Espino
Ministro
Ministerio de Ambiente y Recursos Naturales

MINISTERIO DE AMBIENTE Y RECURSOS NATURALES
MINISTRO

7 Avenida 03-67 Zona 13 - PBX: 2423-0500
http://www.marn.gob.gt

GOBIERNO DE LA
REPÚBLICA DE HONDURAS

SECRETARÍA
RECURSOS NATURALES
Y AMBIENTE

Tegucigalpa, M.D.C., January 07, 2022 OFICIO No. DMA-009-2022

To: Adaptation Fund Board
c/o Adaptation Fund Board secretariat
Email: Secretariat@adaptation-fund.org
Fax: 202 5223240/5

Subject: **EDORSEMENT USE OF NATURE-BASED SOLUTIONS TO INCREASE RESILIENCE TO EXTREME CLIMATE EVENTS IN THE ATLANTIC REGION OF CENTRAL AMERICA**

In my capacity of Designated Authority for adaptation fund in Honduras, I confirm that the above regional Programme proposal is in accordance with the government`s priorities in implementing adaptation activities to reduce adverse impact of, and risk, posed by climate change in the region.

We wish to provide our endorsement and support for the project proposal submitted by Central American Bank Economic Integration (CABEI), World Resources Institute (WRI) and Tropical Agricultural Research and Higher Education Center (CATIE), Whish support or National, the implementing agency for the Project would be the Central American Bank Economic Integration (CABEI)

SECRETARIA DE RECURSOS NATURALES Y AMBIENTE MIAMBIENTE+ SECRETARIO DE ESTADO HONDURAS, C.A.

LIC. LILIAM RIVERA HIPP
SECRETARIA DE ESTADO

ANNEXES

Annex I. Bibliography & References

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Annex II. Gender assessments

A gender analysis was carried out alongside the stakeholder consultation phase in preparation of the project proposal. Gender-related results from the consultation were extracted and synthesized in this analysis to reflect the project's targeted focus on gender issues prevailing in Belize, Guatemala and Honduras. In some instances, the consultation phase has allowed an examination of the identified potential pilot areas.

The aim of this analysis is to better understand the level of engagement, vulnerability, and opportunity of women with regards to the effects of extreme weather events in coastal areas and planned activities within the programmed activities. This improved understanding of the current situation has allowed to inform the proposed activities, the planned outcomes. It is sought that, by considering this situation and mainstreaming gender considerations into all activities, the programme will adopt the AF Gender Policy and thus provide women and men with a better opportunity to build climate resilience, address differentiated vulnerabilities and in increase their capacity to adapt to climate change impacts.

As a general reasoning, we consult the Gender GAP(GGI) for 2021. The GGGI ranks four key areas: health, education, economy, and political participation. According to the Global Gender Gap Report (2021), Honduras ranks 67, Belize 90 and Guatemala 122 out of 156 countries. Despite the improvements that the countries had experienced in the past 5 years there are still important challenges mainly associated to the disparity in political empowerment and the lack of economic participation and opportunity still remains quite high.

Results from the stakeholder consultations

Belize

The case of Belize is a mixed one. Although the consultation reflects that woman have come to hold high level positions within colleges, universities, NGOs and CBOs, they still have to incur better in government key positions for policy decision-making. Men seem to hold most of the upper administrative positions.

At the community level, each village is different, with men dominating in some communities and women taking leading roles within other communities. Specific efforts are needed to ensure that women and young girls are involved in conservation and restoration initiatives. An opportunity is presented as young women are more attracted to agricultural programs within high schools and community colleges than in earlier years. This notes a growing human capital in which the programme will be able to rely on. Stigma still exists on women as society recognizes women working in farming as subsistence farming and backyard farmers but are not generally thought of as professional farmers.

Nursery "farming" or horticultural production can provide opportunities for women to become involved in a new landscape restoration industry for Belize as income generators. Small-scale, backyard cover-crop systems can produce tree seedlings, bioremediation plants, and microbial solutions that fit into a model in which these products are sold to landscape restoration projects, providing a source of livelihood enhancement for the family without the woman having to leave home.

From the interview of 17 project managers in Belize (out of which 9 were women), we noted on several nuances to be considering when working on the landscape and seeking the benefits to the whole community. Some of these considerations are:

- The cultural differences and gender roles within communities, prompting the project managers to engage each group appropriately.
- The women's activities throughout the day, so as to plan engaging activities that do not inadvertently leave a higher portion of the group out.
- The differences across indigenous groups and communities (e.g., different roles between the Maya, Garifuna and Hispanic women in their respective communities).
- The need to strategically engage outlier groups of women, (those not usually directly involved in central decisions and actions within the community, which includes not only women, but elderly and youth as well) and identify their interests in doing so, in order to gain a better representation of these groups' vulnerabilities and specific needs within the project's objectives.

Overall, there is a greater opportunity to deliver on the programmes objectives since there are many women's groups and women are often heavily involved in conservation (from examples of Friends of New River, CZMAI, Friends for Conservation and Development) and women are increasingly empowered and willing to adopt risks for improving resilience and overall development.

Guatemala

To better understand the status of women in relationship with the increased risk in increased weather events, we relied on the consultation held with local communities. Around this area and surrounding Lake Izabal and the Caribbean coastline there are several protected areas including Sierra de las Minas Biosphere Reserve, Bocas del Polochic Wildlife Refuge, Protected Reserve Manantiales Cerro de San Gil, Río Dulce National Park, Punta Manabique and the Biotopo Chocón Machacas. A consultation workshop was implemented in Puerto Barrios (Nov 18th, 2019) and field visits / interviews were implemented in Santa Rosa Balandra (on Nov 16th and Nov 17th) with local stakeholders surrounding the Sierra de las Minas Biosphere Reserve, Cayo Quemado and the Garifuna community of Livingston at the mouth of the Rio Dulce.

The consultations revealed some initiatives that adopt a gender-based approach or that integrate gender considerations. The following initiatives were some of the exemplary initiatives from which lessons on gender engagement were drawn:

- CONAP – Río Dulce National Park: CONAP oversees the administration of the park and does so with a high active participation of 8 women groups and 8 fishing groups with whom they work for conservation and sustainable practice within and around the protected area.
- Asociación Aktenamit: A community-based indigenous association that promotes education and it targets youth, particularly students. It also works with healthcare issues and community development projects with a focus in culture and gender.

More broadly, the lessons derived from the consultation call for the promotion of community based sustainable tourism and strengthening the capacity of local women and youth to get involve in reforestation projects and in initiatives liked to local tourism and adopting gender-responsive approaches throughout the programmes planning, implementation and development of project activities when working with indigenous groups, Garífuna, women and youth groups.

Honduras

Honduras has the second highest rate of women with no own income (39.7%) and registers the second highest rate of women murders in the region with 5.8 femicides per 100,000 women (ECLAC 2018).

In terms of the political framework, Honduras has officially recognized the Equal Opportunities for Women Act (Decree N.° 34-2000), the Law Against Domestic Violence — enacted in September 1997; and its reforms, in 2005-, as well as reforms to the Election and Political Organizations Law (Ley Electoral y de las Organizaciones Políticas, LEOP) Decree 44-2004. Honduras ratified the Inter-American Convention on the Prevention, Punishment, and Eradication of Violence against Women, (Decree N.° 72-95, 1995), International Convention on the Elimination of All Forms of Racial Discrimination (Decree N.° 61-2002) and Convention 111-ILO Concerning Discrimination in Respect of Employment and Occupation (Decree N.° 209, 1960).

Annex III. Stakeholder consultations

Stakeholders' consultations were carried out with the support of local experts. Each consultation was focused on a country in specific and was aimed to capture views, risk areas and social, environmental and gender considerations. The consultations were also aimed at uncovering areas of collaboration or gaps within the project to adjust the list of planned activities.

Community Consultation in Belize

The consultation in Belize resulted in a report describing the scope of work, a methodology outlining the procedure to carry out the consultation and the detailed results from the work carried out. The report finally summarizes the work in a conclusions and recommendations section. This section is presented as it is a clear synthesis of the most relevant points and a description of the pilot project location (the Monkey River Delta). A list of persons consulted and their respective job titles, which is originally part of the annex within the report, is included here.

Belize is entering an era of landscape restoration prompted largely by the realized need to build resilience against impending climate change impacts. This review has demonstrated the large diversity of marine, terrestrial, and social focused NGOs that are very active and have developed close working relationships with those communities they are involved with. Many of these organizations have long histories of successful projects and are capable of implementing initiatives that involve landscape restoration and community livelihood enhancement. The managers of these NGOs have offered important advice during the consultation process for working successfully with farmers, co-managers, women, youth, and Indigenous people, sharing their experiences, failures, and successes.

Belize GoB departments, offices, and units have a history of working in relative isolation of one another, even though many of these agencies deal with different aspects of the same issues and challenges. However, current day challenges are forcing these agencies to begin working together, sharing information, and consulting with one another on mutual issues. There are still outlying agencies, such as the Agriculture Department, but mutual interests and responsibilities will eventually force the inclusion of even this department within task forces and working groups focused on common issues. Administrators and technicians within GoB agencies have also contributed very useful advice and guidance in working with communities to achieve positive change.

The UB and the UB ERI are developing new laboratory capacities and hiring qualified professionals, many of them being young Belizeans returning form study programs abroad and bringing new skills and ideas to Belize. Assessment, monitoring, and research capacity within the country is increasing.

Based on responses from those professionals consulted, a list of issues, challenges, and risks have been compiled. These are all critical issues that should be considered by all funding agencies and their local counterparts working on long term landscape restoration and strategies for adapting to climate change challenges. These challenges and risks involve being able to work well with communities and groups, including men, women, youth, Indigenous people, farmers, fishers, managers, administrators, and educators. It means being able to maneuver within a government structure corrupted at many levels. Perhaps one of the biggest risks are the next two consecutive drought years predicted by the CCCCC.

COLLABORATION OPPORTUNITIES

- A landscape restoration round-table discussion should be convened with the six or seven large funding organizations planning to restore landscapes around Belize to collaborate, coordinate, recognize and respect individual institutional focuses and sites, share project resources, and ultimately recognize greater returns for their investment.
- The immediate collective need will be seedlings of many different tree species, an opportunity to build a small but diverse livelihood-enhancing restoration industry, jobs for seed collectors, nursery managers, horticulturalists, tree-planting teams, agro-foresters, bioremediation filter constructers, and others.
- Host a collaborative workshop for local NGOs and CBOs interested in reforestation, restoration of degraded forests, agroforestry, silvo-pastoral restoration, bioremediation, and other issues related to landscape restoration.
- Review the recent and new policies, frameworks, and projects involved with landscape restoration, fully engage all of the appropriate GoB agencies, hold an open discussion, exchange information, develop a shared vision, and provide each other support.
- Make use of the ROAM tool, housed in the Forest Department, funded by the IUCN, and the Belize National Adaptation Strategy for Agriculture, and identify and prioritize areas where restoration is required.

COMMUNITIES IN GENERAL

- Before a project has been designed, a consultation process with all relevant stakeholders is required (D. Jones, BEST).
- It is very important to identify and learn about the primary stakeholders with whom you will be working (T. Mesh, REDD+).
- To engage community members, focus on the issues that matter most to the stakeholders, and that often involves livelihood (C. Mahung, TIDE).
- To gain full community cooperation, members must benefit from the natural resources (C. Chuc, BAS).
- It is hard to get people to look further than their household economics and feeding their families, if you want them involved there has to be something in it for them (J. Meerman, GIZ).
- Project objectives should be based on the assets available within a community, including the human resources and the presence or absence of human capacities (J. Coombs).
- Livelihood diversification contributes to developing skills within the community that people need and are feasible and functional within a community—capacity building (J, Coombs).
- Look for leaders within the project development process, identify them early and encourage them to help engage others (R. Manzanero, FCD).
- Those stakeholders who have very little or no influence, interest, and/or institutional capacity should be given special attention to make sure that their interests and rights are protected (T. Mesh, REDD+).
- We should recognize and address the problems of the least fortunate and most marginalized groups within communities (D. Jones, BEST).
- Strive to establish long term connections with people that last long after the project is over (D. Jones, BEST).
- It is not the goal of a conservation project to change cultural roles, but only to understand the cultural differences in different communities, and to work with strategies that take into account and accommodate local cultural practices (J. Saqui, IUCN).
- Success is more assured by better appreciating the relationship between a community of long associated people and an outside project implementing organization (A. Dubon).
- When holding group meetings, go to the people rather than trying to lure them to Belmopan or Belize City (G. Borland, UB ERI).
- Know the rules of engagement for each community because they are all different (G. Borland, UB ERI).
- Speak to the Alcalde, the chairperson, or the elders first, get permission to engage the community, ask for strategies for speaking with people, and who to speak to for your project information (G. Borland, UB ERI).
- When meeting with community groups, listen first and get to know them before introducing your plan (G. Borland, UB ERI).

GOVERNMENT

- Much more cooperation from local government is needed to increase effectiveness of projects (E. Pinelo, 4-H).
- Commitment of the upper levels of GoB is very unpredictable following the outcome of the election (C. Young).
- DoE much prefers to work closely with community members to address issues and fix the problems rather than issuing threats and fines (M. Alegria, DoE).
- The Belize National Adaptation Strategy for Agriculture has implications for many other departments (C. Young).
- Forest and Agriculture Departments need to recognize common objectives through mutual agreements that lead to transformative changes in policies, regulations, and business (C. Young).

- Ensure representation from each group—youth, churches, schools, women, community leaders (G. Borland, UB ERI).
- Every community member is part of the community livelihood, the production and services that keep the community functioning (J. Coombs).
- When meeting with community members, it is important to have juice and snacks—it shows respect and is a custom in Belize (G. Borland, UB ERI).
- Hold the meeting when it is most convenient to the community members (G. Borland, UB, ERI).
- If it is an all-day meeting, provide lunch, and if your budget cannot pay for lunch then hold a half-day meeting (G. Borland, UB ERI).
- Talk about and demonstrate practical and necessary environmental work with community leaders and organized groups (C. Mahung, TIDE).
- Facilitators must be aware that sometimes social problems can occur within villages when some people seem to benefit more than others (C. Chuc, BAS).
- It is tricky working with stakeholders in Belizean communities because it is often hard for community members to work together (R. Manzanero, FCD).
- Environmental professionals within a community (forest rangers, tour guides, tour operators, fisheries officers, educators) can be good champions for a project that contributes to both conservation and livelihood enhancement within their communities and their protected areas.
- Resource users (licensed loggers, hunters, fishers, sport fishers, tour guides, and farmers), once they recognize the interconnectivity of ecosystem health to their personal and community livelihoods, can be very important in monitoring and reporting on illegal deforestation, dredging, and other activities, and the status of restored areas, and these people are usually the local experts.

FARMERS	MARINE COMMUNITIES	WOMEN	YOUTH	INDIGENOUS PEOPLES
● Connect together farmers who are involved or interested in soil and forest restoration for the protection of production systems and water resources to exchange ideas, concerns, lessons learned, and success stories. ● If you want to involve Mennonite farmers in reforestation, you must make them aware of the project and its benefits to them (E. Romero, PfB). ● When meeting with farmers the approach to use is "I am here to listen," and truly listen, ask questions for	● Fishers, tour guides, and marine protected areas managers and rangers are very important groups to work with when the focus is on mangrove and coastal forest areas. ● Meeting with all marine managers will be arranged when issues need to be discussed, action plans made, or information dispersed. Each marine manager has his or her home community to which they can take information, or collect	● Women can be important community leaders and are often more receptive and easier to engage than men (D. Chuc, BAS). ● Women involved in business and skills development projects are becoming the principal income generators within families and assuming positions of authority within communities (C. Mahung, TIDE). ● Women do worry more about the collective, the community, and therefore need to be involved (E. Kay, UB ERI). ● Women are usually very active in the community and are heavily involved in the school (R. Zavala, Head of Agriculture, ESTM). ● In some communities, men are the leaders and women	● It is essential that youth are involved in conservation initiatives, particularly reforestation projects designed to build up the natural resource base for future generations (E. Pinelo, 4-H). ● Principals and teachers at many schools are often eager to engage their students in community-based projects and can coordinate such efforts (F. Arzu, TCC). ● Parents send their children to learn new things because they want change, they want their children to live in a better world (R. Zalava, ESTM). ● It is the youth who are often the ones who are bold enough to make the changes	● Many Garifuna are educators and hold positions of leadership and management, offering opportunities to connect with community leaders, farmers, and youth within their coastal communities. ● Maya groups are rich in cultural knowledge compiled over many, many generations, including knowledge of trees and the cultivation and use of many native tree species (C. Coc and P. Mis, MLA). ● There is a strong ecological ethic among many Maya community groups that are still very closely tied to the forests and lands (C. Coc and P. Mis, MLA). ● The Archaeological site of El Pilar brings together the association of the Ancient Maya and present-day Maya to the forests (A. Ford, University of California System). ● It is very important to both understand and respect Maya traditional relationships with their natural environments (C. Coc and P. Mis, MLA).

clarification, and try to understand (V. Pascual, Agriculture). ● When converting to different agricultural systems, there is additional risk beyond climate risks and farmers are often very reluctant to gamble with their crop production potential because it is their livelihood (V. Pascul, Agriculture). ● Since the 1980s cattle ranching, large-scale farming, and logging have driven deforestation in Toledo, not slash-and-burn agriculture as has been proposed (C. Coc and P. Mis, MLA). ● Involving farmers is key to successful reforestation because they are the largest cause of deforestation (M. Windsor, Forest Department) and they have the potential to be part of the largest solution.	information (C. Mahung, TIDE). ● Educational outreach to fishers is done through boat-to-boat sessions, adopted from BAS, and focused group sessions (D. Mahler, SEA). ● Remember that hunters and fishers are typically very passionate about their livelihoods (J. Saqui, IUCN). ● Fishing is a lifestyle engrained into many cultures allowing people to be independent, to control their livelihoods, and it connected people together who shared this common bond (E. Kay, UB ERI)	are quiet at meetings, while in other communities women will be as outspoken as men, and it is important to know the situation within each community you work with (G. Borland, UB ERI). ● For communities where women are not as vocal, you must meet them as women's groups during a time when they can be available, going through the group leaders and asking them to bring in other women (G. Borland, UB ERI). ● Women are very busy, and meetings must be relevant and important enough for women to afford the time (J. Coombs). ● If a project calls for meetings with rural women, meeting venues cannot be far from their homes and should be coordinated when children are in school and finished before school is over for the day (D. Jones, BEST). ● It is typically more appropriate for women working on a project to address women's groups within many village settings (G. Borland, UB ERI). ● MLA members are considering how to define women's land rights by observing how women use natural resources through arts and crafts (C. Coc and P. Mis, MLA). ● While there may be a focus on women, we have to consider male and female community members, each group having very distinctive roles (J. Coombs). ● Many projects today force the women issue, making it an issue when it may not be, forcing cultural change to	needed 9 (R. Zalava, ESTM). ● When working with youth, go through a school or youth organization and always keep parents well informed about activities and objectives, easily done through schools by sending notes home to parents (F. Arzu, TCC). ● Many NGOs working with environmental issues have education programs and work closely with youth groups and schools. ● Environmental and cultural clubs have been formed in many schools throughout Belize (UN CBD Belize National Report 6). ● The Belize Youth Movement, based in Belize City, has branches in many municipalities and can reach out to and engage many youth (R. Vellos, Mayor, Corozal Town). ● The 4-H Program, headquartered in Belmopan, focuses on training youth in agriculture and is very interested in cultivating trees for restoration of degraded landscapes (E. Pinelo, 4-H). ● Sometimes it is challenging to work with Indigenous youths, but they can be engaged by focusing on their interests within their community settings (T. Mesh, REDD+). ● Working through local universities and community colleges offering programs in agriculture, natural resource management, agriculture, and related	● The Maya people value their reliance on the forest, which is critical to whom they are as a people (C. Coc and P. Mis, MLA). ● In the Maya Development Vision, the Maya see themselves as a collective of people and want to maintain that system based on resilience, creativity, and environmental integrity of land and water (C. Coc and P. Mis, MLA). ● The Maya do not want to do participate in projects, even if there are good benefits, if the project objectives are contrary to the Maya People's common interests (C. Coc and P. Mis, MLA). ● Several Maya communities in northern Belize are very interested in replanting old cattle pastures and restoring dried creeks (F. Cantun, Kanan Miatsil). ● Everything done in Maya communities must involve close association with village leaders (Alcaldes, Chairpersons), church groups, schools, youth groups, women's groups, and any other community organizations, be transparent, and acquire free prior consent from all participants (C. Coc and P. Mis, MLA). ● Always meet with the Alcalde first to explain your objectives and seek advice and permission before approaching the Mayan community (P. Saqui, UB NRMP). ● When working in Mayan communities, it is very important to have someone on your team who can speak to the community and to translate, ensuring that everyone understands (S. Williams, IICA). ● Historically there has been a serious dispute between the GoB and the Maya of Southern Belize that was ultimately settled in international court in favor of the Maya, but there is still a serious lack of trust between Maya communities and the GOB (C. Coc and P. Mis, MLA). ● Cacao production is an agroforestry product based on Indigenous knowledge that is often exploited by international companies (C. Coc and P. Mis, MLA). ● Working with Maya communities through the Ministry of Agriculture Extension Service Officer can

		become more in line with the cultural beliefs of the funding agency countries rather than the local cultures (J. Meerman, GIZ).	disciplines offer connections to youths focused on professional development paths. ● Use the communication technology that youth use, blending old experiences with new tools (D. Jones, BEST). ● A seedling production network for landscape restoration initiatives, with the UB Agricultural Program at Central Farm being the central node, has been proposed in several of the large restoration project proposals. ● There are many young Belizean professionals returning from institutions around the world with Master and Doctoral degrees in various fields that can contribute to landscape restoration projects in Belize and the region.	yield good results as these officers often have been accepted and trusted by the communities after years of engagement and understand the particular characteristics of each community. If one Mayan family within a community is seen to prosper above the others, perhaps by profiting disproportionately from a project, for example, then resentment and conflict can occur (S. Williams, IICA)

Monkey River Delta Pilot Project for Belize

List of Experts Consulted

Alegria, Mr. Martin, CEO, DoE
Arzu, Mr. F., Vice-Principle, TCC
Audinette, Mr. Darrel, Conservation Investment Mgr., PACT
Borland, Ms. Giselle, Training Officer, ERI
Cantun, Ms. Felicita, Kanan Miatsi
Cho, Ms. Celi, Environmental Officer, DoE
Cho, Ms. Cristina, BENIC, MLA
Cho, Dr. Percival, CEO, MAFFESD
Cho-Ricketts, Dr. Leandra, Marine Specialist, UB ERI
Coombs, Dr. Jay, Consultant, Women and Youth
Chuc, Ms. Dareese, Education and Communications Director, BAS
Dubon, Mr. Ansel, Consultant
Figueroa, Dr. Omar, Minister, MAFFESD
Hamilton, Ms. Gem, First Vice President, BAY
Jones, Mr. Denis, Managing Diretor, BEST
Kay, Dr. Elma, Terrestrial Specialist, UB ERI
Lisbey, Ms. Roseli Civil Society Liaison Officer, MNR
Lopez, Mr. German, Sustainable Forest Management Officer, Forest Department
Mahler, Ms. Deidra, Education and Outreach Officer, SEA
Mahung, Ms. Celia, TIDE
Manzanero, Mr. Rafael, Executive Director, FCD
Mattis, Mr. Colin, Deputy Chief CC Officer, NCCO
Meerman, Mr. Jan, Botanist/Tropical Ecologist, GIZ
Mesh, Dr. Timoteo, Social Specialist, REDD+
Mis, Mr. Pablo, Chair, BENIC, MLA
Pascal, Dr. Victoriano, Agriculture, MAFFESD
Patru, Mr. Peter, Town Administrator, Dangrega Town
Paulino, Ms. Ethnelda, Garifuna elder, educator
Peralta, Mr. Ahnivar, CCCCC
Pinelo, Ms. Elvira, Agriculture, 4-H
Requina, Mr. Gustavo, Ya'axche
Requina, Mr. Leonel, UNDP GEF-SGP
Rogers, Dr. Arlenie, Marine Ecology, UB ERI
Romero, Mr. Ediberto, Executive Director, PfB
Rosado, Mr. Samir, Coastal Planner, CZMAI
Salas, Mr. Osmani, 13th Senitor
Saqui, Dr. Jenny, Forestry, Liaison Officer, IUCN
Saqui, Dr. Pio, Anthropologist, UB NRMP
St. Luce, Ms. Hanna, National BIOFIN Coordinator
Thompson, Mr. George, NICH
Valdez, Mr. Mercedes, Officer, Forest Department
Vellos, Mr. Rigo, Mayor, Corozal Town
Walker, Ms. Zoe
Williams, Dr. Steven, IICA
Windsor, Mr. Marcello, DCFO, Forest Department
Young, Dr. Colin, CCCCC
Youth Officer, Anonymous, Department of Youth Services
Zavala, Ms. Reyna, Head of Agriculture, ESTM

Community Consultation on Guatemala and Honduras

In Guatemala and Honduras, the community consultation sought to assess the potential environmental and social risks and opportunities associated with the Project "Increasing climate resilience through restoration of degraded landscapes in the Atlantic region of Central America".

Specifically, it sought to i) identify key stakeholders that are relevant to the geographic scope of the Project; ii) capture the potential social and environmental risks and iii) integrate relevant stakeholder's input to develop mitigations measures to reduce the potential risks associated with the project.

Phases of the stakeholder consultation

The consultation process was implemented through the following four stages:

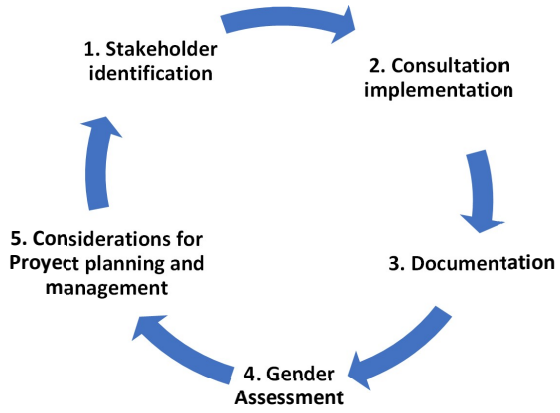


Figure 1. Stages for the stakeholder consultation

Toward the end of the 1980s, the indigenous groups began to organize themselves, and between 1992 and 2003, the consolidation of the indigenous and black movements gained more power in Honduras. Each indigenous group has organized into an organization recognized by the government as a legal entity to protect their economic, social and cultural rights linked to their traditional livelihoods. Some of these organizations includes Federation of Pech Tribes of Honduras (FETRIP); Tawanka Indigenous Federation of Honduras (FITH) and the Moskitia Asla Takanka (MASTA). The Afro-Honduran communities (Garífunas) also has a representative body known as the Black Fraternal Organization of Honduras (OFRANEH). In addition to their representative bodies, there are also NGOs such as the Agency for the Development of the Mosquitia (MOPAWI, Honduras) which has been accompanying and providing technical support to the indigenous peoples of the Mosquitia region (Miskitos, Tawankas, Pechs and Garifunas) in defense of their rights to collective ownership of land and natural resources.

From the human development perspective, Honduras poses numerous challenges. It ranks 131 in human development, and it has a gender inequality index of 0.480 which occupies the penultimate position in Latin America. The country has one of the highest poverty levels, economic and social inequality levels in Latin America. It is estimated that 64.5 % of

Honduran households experience some level of poverty, and of these, 42.6% of the households fall in extreme poverty level (UNDP 2019).

Its geographic location Honduras in the Central American plus its biophysical and topographic characteristics of the country, exposes the country to extreme meteorological events associated to climate change. This is exacerbated by high gender inequality (gender inequality index of 0.480- penultimate position in Latin America) and high poverty levels (42.6% of the population living in extreme poverty) according to the United Nations Development Program Report (2019). The Global Climate Risk Index developed by Germanwatch (2019) also placed Honduras as one of the most affected countries in the region from the impacts of extreme weather events (Eckstein et. al 2019) making Honduras a highly vulnerable country therefore concerted actions are critical to enable Honduras to adapt to the impacts of extreme weather events.

Forest restoration initiatives and efforts in Honduras

In addition to those projects mentioned in section II, there has been several project related initiatives that supports ecosystem protection and forest restoration particularly in the coastal zones. Project initiatives have been identified in conservation, restoration and management of terrestrial, coastal and marine ecosystems (Table 19).

Table 19. Relevant Project initiatives in Honduras

PROJECT INITIATIVE	OBJECTIVE	IMPLEMENTING AGENCY
Promoting climate-resilient forest restoration and silviculture for the sustainability of water-related ecosystem services	Improving the provision of water services by increasing the climate resilience of vulnerable coniferous forests.	Min Ambiente ICF Climate change Office Funding recently approved from the Green Climate Fund
Restoration and productive ecosystem improvement in the protected forestry zone of El Cajón Reservoir (El Yunque Microwatershed)	Improve and restore forest cover through agroecological practices and landscape restoration. A strong emphasis has been given in watershed management for climate change adaptation	Empresa Nacional de Energía Eléctrica, ENEE Funding from the Japan International Cooperation Agency (JICA)
Coastal Biodiversity: regional project for a bi-national management of ecosystems in the northern triangle of Central America	Reduce the overexploitation of fisheries and reduce the conversion and degradation of mangroves and wetlands	IUCN GOAL Association Rhode Island University
Strengthening the governance of marine resources in Omoa and Puerto Cortés	Engage local associations of Puerto Cortés and Omoa in the management of fisheries and strengthen organizational capacity to improve the governance of coastal- marine resources	Inter American Foundation CEM

Smart coasts: integrating climate change in marine protected areas and coastal management of the Mesoamerican Reef ecoregion	Implement climate-smart principles in the management of marine protected areas (including coastal ecosystems such as mangroves and wetland areas) and policy development for the countries that are part of the Mesoamerican Reef to improve climate change adaptation (Belize, Honduras, El Salvador and Guatemala)	Comisión Nacional de Áreas Naturales Protegidas (CONAP)- Guatemala Ministry of Agricuturel, Fisheries, Forest, Environment and Sustainable Development- Belize Ministerio de Medio Ambiente y Recursos Naturales (MARN)- El Salvador Mi Ambiente- Honduras
Improving the management of fisheries and development of a municipal model of management for Mesoamerica	Recover small-scale fisheries and improve the protection of natural ecosystems that generate benefits to local coastal communities	RARE Smithsonian Institution
Coastal Marine Project	Increase coverage and effective management of coastal-marine protected areas	MiAmbiente CATIE
From the watershed to the coast: improving watershed improvements and local livelihoods in the Goascorán River Watershed	Forest restoration initiatives and protection of natural ecosystems and biodiversity. Promote the sustainability of local livelihoods through the implementation of Climate Smart approaches.	UICN, USAID, FUNSALPRODESE, FUNDER, CODDEFFAGOLF
Guanaja Mangrove Restoration Project	A multi-year restoration effort to plant 400,000 mangrove seedlings to restore a self-sustaining healthy ecosystem in the Guanaja Island, Honduras. It includes the establishment of a monitoring program and an environmental education to raise the awareness ensure the long-term protection the mangroves.	Bay Islands Conservation Guanaja Association Ocean Foundation
Empowerment of Women for Climate Action in the Forestry Sector	Promote conservation and the responsible use of the forests and reduce deforestation and greenhouse gas emissions in the country. The project will work with women as well as rural and indigenous youth from 12 municipalities in the Western region of the country, in the districts of Lempira and Santa Bárbara.	*FAO and the Government of Canada*

Forest of the World in Honduras	To protect the three protected areas near La Ceiba: Pico Bonito National Park, The Wildlife Refuge Texiguat and the Nombre de Dios National Park by promoting sustainable forest management, the establishment of agroforestry systems on degraded lands	Forest for the World (NGO)

Consultation workshops

The consultation workshops and semi-structured interviews were implemented during the month of November 2019 in Tegucigalpa (November 11th, 2019), La Ceiba (November 13th), Trujillo (November 14th) and Tela (November 15th) (Figure 3.). A total of 52 people participated from in the consultation out of which 60% were men and 40% were women.

Figure 3. Sites where consultation workshops and meetings were implemented in Honduras.

The interinstitutional marine landscape committee was created to coordinate initiatives linking coastal and marine landscapes. It encompasses activities that links terrestrial ecosystems close to the coast of the Department of Atlántida and the marine protected areas found in the Bay Islands Department. The main purpose of the committees is to strengthen governance structures and engage key local stakeholders in marine and terrestrial ecosystems. The interinstitutional Committee have been working together strengthening terrestrial and marine landscape initiatives that integrates the management of the ecosystems. The interinstitutional committee is integrated by 13 institutions which includes: DIGIPESCA, ICF, municipalities, RECORTUH, Bay Island Foundation, the Center of Marine Studies (CEM), tourism chamber, FUNDERPOR, BICA Roatán, Municipalities of La Ceiba, Utila, Roatán and Guanaja, Cayo Cochinos Foundation, Fundación Guaruma, Cuero y Salado Foundation (FUCSA) and the Regional Center of Environmental Documentation and Interpretation (CREDIA).

Main impacts associated with extreme weather events perceived by the groups:

- Excessive rains that cause flash flooding in the city. La Ceiba has a high population (over 200,000 people) and there has been insufficient planning. Infrastructure is obsolete, so there is excessive run off when the rain comes. Excessive trash in the streets makes the city more vulnerable to flash floods
- Decrease in precipitation and droughts generate limited access to water
- Saltwater intrusion
- There is strong coastal erosion that is reducing and impacting beach areas making city infrastructure more vulnerable to storm surges

Human induced impacts include:

- Expansion of the agricultural frontier and cattle ranching are contributing to illegal logging and deforestation. Deforestation is a major problem in the Cordillera Nombre de Dios
- Expansion of African oil palm plantations, there are studies that show the impacts of contamination of agrochemical and its impacts in water quality and the impacts in natural ecosystems. No projects have helped to deal with the conflicts with African oil palm plantations. Stakeholders considered a top priority to work with them
- Infrastructure development for tourism and urban sprawl is also impacting natural ecosystems in the coastal zones.
- There are policy incongruencies between forestry and agricultural sectors. As one of the participants expressed, the government wants to protect and restore forest but on the other hand the government provides agricultural subsidies that favor the establishment and expansion of agricultural land e.g., African oil palm plantations.
- Cuero Salado Wildlife Refuge protects some of the largest tracts of mangroves but currently it´s being threatened by the expansion of African oil palm plantations.
- Landless people are migrating from the center of the country to the coastal regions.

Human induced impacts include:

- Guanaja is the site with the greatest population density in the country, there are approximately living 10,000 people living in overcrowded conditions and there are major problems associated with the lack of treatment of black and grey waters generating impacts in the coastal and marine ecosystems
- The islands are also experiencing the arrivals of migrants mainly ladinos and Miskitos that has arrived at the islands and many of them are implementing unsustainable subsistence farming practices which are impacting the forest cover of the islands (mainly pine and broadleaf forest). This phenomenon is more particularly present in the Guanaja Island.
- Local communities are concerned with the increased levels of drug trafficking and money laundering that is now present in the islands and the establishment of cattle ranching and this reduces forest cover and degrades the soils.
- Approximately 90% of the populations relies in commercial fishing as their main livelihood strategy of the activity is declining due to the overexploitation of fisheries and the impacts that urban centers are having in the marine life.
- People are not changing cultural practices that are generating negative impacts in the ecosystems.
- There is little or no institutional presence, so people continue to overexploit the fisheries with no permission and cut the mangroves. Park rangers constantly face threats.
- There are limited sources of employment, being fishing the most important source of income for most of the families in the islands.
- Foreigner constantly take away archaeological artifacts, so the cultural heritage of the islands is being lost.

- Provide technical support to local farmers to improve productivity and certification schemes to minimize the negative impacts of crops such as African oil palm
- Forestry and agricultural policies seem to be incongruent. Policies need to be better articulated.
- Strenghent inter-institutional ICF-MiAmbiente- SAG
- Implement land-use planning
- Improve law enforcement
- Promote more sustainable livestock systems
- Raise awareness of protecting natural ecosystems. Engage more the young and women in environmental education
- Establish tree nurseries
- Promote low impact tourism

Alternative solutions:

- Implement reforestation projects with native species to increase tree cover and restore natural ecosystems
- Important to restore forests in watersheds that provide water resources to local communities in coastal zones.
- Increase the participation of the local police to increase security in the region
- Resolve land tenure conflicts particularly inside the protected areas
- Relocate people that live inside the protected areas
- Implement development projects to improve local livelihoods
- Promote community based sustainable tourism and the creation of entrepreneurial initiatives
- Establish capacity building opportunities linking entrepreneurial initiatives for local women
- Strengthen the governance of the Local Development Committees
- Delimit the watersheds and establish projects that can contribute to improve the livelihoods of local people to reduce the pressures in the watershed. It would be good to implement productive projects involving agroforestry systems with fruit trees.
- An important priority area is to work to solve the water issues because without water, we can´t have tourism.

Tela, Department of Atlántida

For this workshop we had representatives coming from La Ceiba, Guanaja Island and Puerto Cortés.

Group 1. Tela

Tela is located in the Sula Valley. There are 5 officially declared protected areas. These areas have also been delimited for watershed management. Protected areas in this region includes the Yannet Kawas National Park, Izopo National Park, Lancetilla Botanical Gardens and the Quetzilda Wildlife Refuge. Tela has a very diverse landscape which includes agricultural land, mountains, mangroves, coral reefs and beaches. There are 8 municipalities and 5 Garífuna communities in this region.

Main impacts associated with extreme weather events perceived by the groups:

- Beach erosion is very strong specially near the Garífunas communities

- More frequent flooding during the rainy season. In the case of Tela, it is more recurrent around the margins of the Chamelecón and Ulúa Rivers
- Urban centers are experiencing more frequent flooding
- Decrease in the water flow and water scarcity
- Species displacement
- More frequent droughts
- Loss of biodiversity
- Decrease in agricultural productivity

Human induced impacts include:

- Deforestation associated to agriculture and cattle ranching
- Pollution
- Migration of people from different parts of the country, they come to this region to secure land, find alternative economic activities. They clear the land to establish small farms.
- Local communities suffer from flooding at times of the year when there is strong storm surge, loss of infrastructure

Alternative solutions:

- Priority has to be given to mangrove restoration initiatives.
- The interior of mountainous protected areas has also been severely degraded, so protected natural ecosystems need to be restored but in order to do this the government need to interfere. There are people living inside the protected areas and there are people farming.
- We need to integrate different generations and generate economic alternatives particularly to women and youth. We need to reduce the apathy among young people.
- Strengthen interinstitutional coordination
- Support sustainable initiatives
- International cooperation needs to be aligned to the themes of interest.
- Protecting the lagoon is relevant to maintain the fisheries and protect the cultural resources.
- Strengthen protected area management plans
- Implement territorial management plans
- Implement fisheries management plan
- Promote entrepreneurial initiatives particularly those integrating women and youth.

Puerto Cortés, Department of Puerto Cortés

Puerto Cortés is part of the Mancomunidad de Municipios del Golfo de Honduras. There are 26 municipalities that are part of the Mancomunidad, and they rotate the Presidency once a year.

Main impacts associated with extreme weather events perceived by the groups:

- Beach erosion near the Garífunas communities
- More frequent flooding during the rainy season. In the case of Tela around the margins of the Chamelecón and Ulúa Rivers
- More frequent flooding in the urban centers
- Reduction of the water production zones, the “caudales” of river are decreasing
- Species displacement

- More frequent droughts
- Loss of biodiversity
- Decrease in agricultural productivity

Human induced impacts:

- Solid waste contamination in waterways
- Loss of tree cover
- Expansion of African oil pal plantations
- Water scarcity due to deforestation/land-use change

Alternative solutions:

- Puerto Cortés has a Municipal Development Plan that has a strong focus in land-use planning, and it is updated every 5 years. It is a model for other municipalities. It is important to share experiences with other Municipalities in Honduras. There has been coordinating efforts with the Municipality of Puerto Barrios in the Izabal Department.
- There is an environmental municipal policy.
- Puerto Cortés has identified 13 water production zones and there are 7,000 ha that were officially declared as water production zones since 2006. It is the first municipality with officially declared water production zones.
- Implement reforestation activities, tree nurseries and agroforestry to produce Wood for energy.
- Land use planning to regulate the areas dedicated for Africana oil palm production.
- Establish a policy of zero plastic use
- Promote good practices for solid waste management
- Implement environmental education programs and work with the local schools.
- Integrate efforts with other Municipalities, including with the Municipality of Puerto Barrios in the Department of Izabal, Guatemala.
- Officially declare water production zones, to delimit, restrict land-use change and reforest/restore degraded ecosystems.
- Strengthen working network with other regions/departments
- Only Municipality that has a policy related to watersheds.
- Municipality coordinate activities with the local protected areas
- Engage the youth
- Educate people to plant trees.
- Involve local governments in projects so that the local stakeholders are engaged in the process.

Forest restoration initiatives and efforts in Guatemala

To address the increasing degradation of forest resources, Guatemala has made an international commitment by pledging to restore 1.2 million hectares of degraded lands under the Bonn Challenge and the Latin America 20 × 20 Initiative. In order to do this. The government promoted the creation of a discussion platform called the Roundtable of Forest

Landscape Restoration (Mesa de Restauración del Paisaje Forestal de Guatemala). The objective of this platform is to promote the dialogue and engagement of different stakeholders to articulate, coordinate and implement forest related activities. The platform integrates more than 50 institutional members representing various sectors (government, academia, NGOs, indigenous peoples, local governments). Relevant stakeholders include all the government institutions such as the National Institute of Forests (INAB), the National Council of Protected Areas, the Ministry of Environment and Natural Resources (MARN).

The National Strategy for Forest Landscape Restoration (NSFLR) was a result of the concerted efforts made by the Roundtable of Forest Landscape Restoration (www.inab.gob.gt). This is a policy instrument that aims to "*restore 1.2 million ha of degraded land by 2045 and its goal is to link different actors, establish instruments of public policy and promote capacity building*". The role of the Roundtable of Forest Landscape Restoration is to implement, monitor y evaluate the NSFLR. It is expected that throughout time, Guatemala will be successful in restoring degraded ecosystems, be able to increase forest cover and contribute to improve the livelihoods of local communities that depend in forest resources. Priority areas has been given to riparian/watershed forests, mangroves, protected areas, sustainable forest management, implementation of agroforestry systems among others.

These kinds of platforms provide an important and unique opportunity to strengthen coordination between different institutions and relevant stakeholders at a national, regional and local level and also to implement different pilot projects that can support local stakeholders in forest restoration initiatives and sustainable natural resource management.

Izabal Department

The Izabal Department is one of the 22 departments of Guatemala. Izabal is bordered by Belize to the north and by Honduras on the eastern side. From an ecological point of view, Izabal is a very important area since it is surrounded by the Izabal Lake which is Guatemala´s largest lake which flows to the Río Dulce out to the Caribbean Sea. A consultation workshop was implemented in Puerto Barrios (Nov 18th, 2019) and field visits / interviews were implemented in Santa Rosa Balandra (Nov. 16 and Nov. 17) with local stakeholders surrounding the Sierra de las Minas Biosphere Reserve, Cayo Quemado and the Garífuna community of Livingston (Figure 4). A total of 27 people participated in the process.

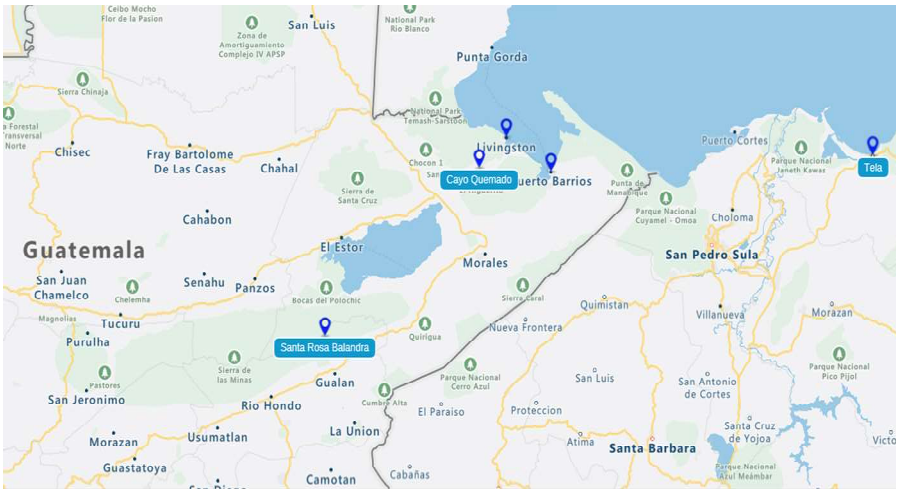


Figure 4. Sites where consultation workshops and meetings were implemented in Guatemala.

Table 1. Relevant Project initiatives in taking place in the Izabal Department

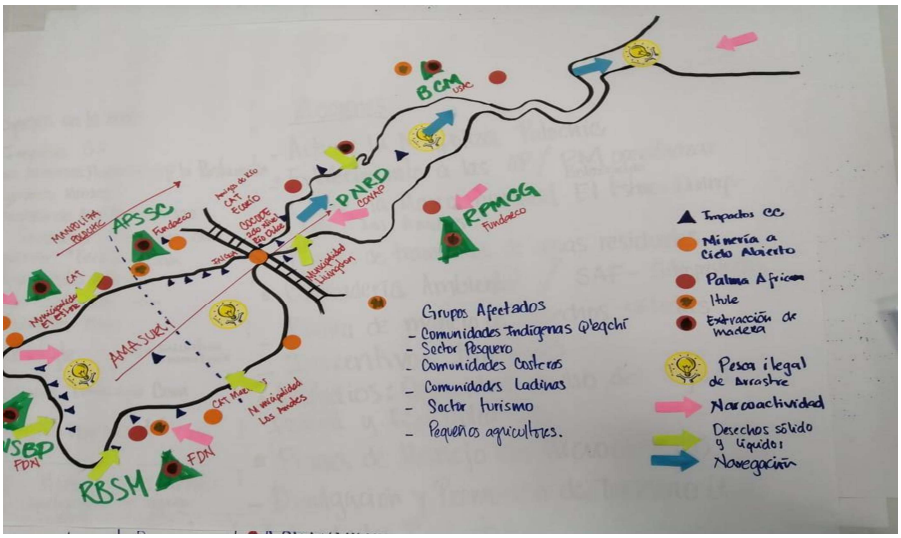
Human-induced impacts in the middle of the Lake Izabal and Río Dulce Watershed

There are key relevant stakeholders that strategically work in the watershed of Lake Izabal and Río Dulce which are important to engage in any actions that might take place in this part of the watershed. Relevant stakeholders include: Fundación Defensores de la Naturaleza, AMASURLI, Muninicpalityi of Livingston, Municipality of El Estor, Municipality of los Amates, FUNDAECO, MANPOLIZA (Manco municipalidad del Polochic), Comité de Autogestión Turística, Local Development Council (Consejo Comunitario de Desarrollo de segundo nivel) of Río Dulce, CONAP, University of San Carlos (USAC), Amigos de Río y Ecorío as well as the regional government entities such as CONAP, MARN, MAGA and other local organizations that might be present in the region. There are 5 protected areas: Sierra de las Minas Biosphere Reserve (RBSM), Bocal del Polochic Wildlife Refuge (RVSBP), Río Dulce National Park (PNRD), Protected Reserve Manatiales Cerro San Gil (RPMCG) and the Sierra Santa Marta Cruz. There protected areas are managed and co-managed by different organization and are important elements in the landscape since it provides different ecosystem services for the local communities (Figure 5).

Figure 5. Human-induced impacts identified in the watershed of Lake Izabal and Río Dulce

Human-induced impacts are associated to open pit mining for lithium close to the community of Estor, illegal logging and illegal fish trawling, illegal activities associated with drug trafficking, pollution of waterways by solid waste and black waters and fuels coming for ships.

The most vulnerable communities associated to these impacts are the Maya Q´eqchi´, coastal communities, small tourist entrepreneurs and small-scale farmers.



Alternative solutions to reduce impacts in the watershed

- Strenghent and increase the effectiveness of protected area management by incorporating in their management plans landscape restoration measures*
- Create the Mancomunidad de El Estor, Livingston and los Amates to channer public funds that can be more effectively used in the local communities. There are current initiatives and negotiations with the current mayors
- Establish water treatment plants for black and grey waters
- Work with environmental livestock management through the implementation of best practices and the establishment of silvopastoral- systems*
- Increase the coverage of forestry incentives
- Implement research studies to regulate the capacity use of Lake Izabal and the Río Dulce*
- Implement micro-watershed plans for Lake Izabal and Río Dulce*
- Promote sustainable ecotourism initiatives in the region
- Establish and promote sustainable productive initiatives linked to value chains (agroforestry systems, honey production, crafts, sustainable fishing) Sistemas agroforestales, miel, artesanía, ecoturismo, pesquería) *.

*Items prioritized by the group

Human-induced impacts in the lower Lake Izabal and Río Dulce Watershed

Relevant stakeholders in the lower part of the watershed and coastal zones include BIM, MARN, FUNDAECO, CONAP, MARFUND, AKTENAMIT, ASOPROGAL, Municipality of Livingston, WWF, CISP, UICN-GOAL/USAID. There are 2 protected áreasa identified: Punta de Manabique Wildlife Refuge and Río Sarstún Multiple Use Zone (close to Belize).

Human-induced impacts are associated to the expansion of African oil palm and banana plantations, cattle ranching, illegal fishing, pollution with solid waste, negative impacts associated with fish trawlers and illegal logging of mangroves.

Alternative solutions to reduce impacts in the lower watershed and coastal zones

- Complement actions with the IUCN/Regional Coastal Biodiversity Project (Proyecto Regional de Biodiversidad Costera. The Project is implementing a gender strategy for sustainable natural resource use, strengthen the Roundtable of Mangroves in Manabique, coordinate bi-national actions with the Biological Corridor Cuyamel-Omoa (Honduras) Punta de Manabique (Guatemala), strengthen biocommerce with strong emphasis in tourism, strengthen a small grant program for community-based groups.
- FUNDAECO is coordinating with WWF to implement the Smart Coast Project which has a string emphasis in climate change adaptation strategies in coastal and marine zones. It is also implementing the Project Strengthening Territorial Governance with the SUMMIT Foundations. Marfund is also working in strengthen capacities in sustainable fisheries.
- CONAP and Marfund are working together to strengthen the management of protected areas and with FONACON in alternative productive and economic activities to fishing.
- Establishment of tree nurseries for reforestation and ecosystem restoration
- The Guatemala Marine Infantry Brigade and the MARN are working together to implement “Biobardas” to capture and clean solid waste that falls into the rivers and also raising awareness to reduce pollution of waterways. They are also very active in the implementation of reforestation projects.
- Strenghent ASOPROGAL. This is an organization that work with small grants to establish and promote local sustainable activities.
- Work with the Livingston Municipality to work in fish aquacultures to reduce the pressures on existent fisheries
- Promote community based sustainable tourism and strengthen the capacity of local women and youth to get involve in reforestation projects and in initiatives liked to local tourism.
- Establish opportunities to exchange experiences with other departments and with other countries e.g., with Belize and Honduras

GENERAL FINDINGS

Coastal ecosystems in Honduras are threatened by a variety of human activities and climatic variability. These threats negatively impact the ecological functions of those ecosystems and, therefore, the human wellbeing benefits that can be derived from them.

Land use change and habitat change (natural ecosystem conversion, degradation and fragmentation) is taking place in the coastal regions of Honduras. Habitat change not only negatively impacts the viability of mangrove ecosystems—in terms of extension, condition and landscape context—but also the variety of co-benefits humans receive from those ecosystems, including coastal protection, fish production, water filtration, recreation and tourism, and carbon capture and storage. mangrove conversion, degradation and fragmentation is due to a number of unsustainable practices, such as: 1) extraction of mangrove for timber, fuelwood and charcoal; 2) deforestation due to expansion of the agricultural frontier (i.e. African palm plantations, cattle ranching, pineapple plantations, sugarcane plantations, etc.); 3) deforestation due to urban expansion; 4) altered river hydrology regimes due to water diversion for agricultural irrigation leading to salinization of coastal wetlands and deforestation due to commercial aquaculture and salt production.

Climatic variability on the other hand not only causes direct negative impacts on terrestrial, coastal and marine ecosystems but it also exacerbates the impacts of other threats on already stressed ecosystems and their ecological functions.

FINAL CONSIDERATIONS

- Consultation should be a continuous process that starts early in the project development process. Regardless of the outcome continuing with the dialogue is essential. Continuity requires ongoing dialogue with stakeholders. This preliminary consultation allowed to identify those relevant stakeholders that could participate in the project proposal and for an eventual project implementation phase.
- Stakeholders mentioned that it is important to continue the dialogue, engage local organizations and provide frequent updates during the different phases. The process of consultation and participation should include precise agreements that could be adapted and monitored throughout the life of the project.
- Project design should take into consideration management plans and tools that the country has already developed to prioritize the implementation of specific measures e.g., consider/articulate actions with the management plans of protected areas
- Stakeholders also considered important to integrate and complement action with other regional projects e.g., IUCN Project Coastal Biodiversity / Smart Coasts to strengthen the integration efforts between different organizations and international cooperation.
- Project strategies should respond to the annual operation plans of protected areas
- Stakeholders also mentions that projects should be implemented only in the coastal regions. It is important to implement an integrated approach in natural ecosystem management and restoration in order to address the causes of threats and impacts form its source. Implementation of actions should also be considered middle and upper level of the watersheds. Initiatives will have a greater impact in coastal communities if issues are tackled at the source of the problem.
- Stakeholders also requested general update and information sharing with the participants. The best channel to share the information is through the interinstitutional platform from each consulted region.
- Gender-responsive approaches are important to consider in project activities particularly when working with indigenous, Garífuna, women, and youth groups. It will be important to consider gender issues in the continuous dialogue process for developing the project proposal and following stages for the implementation phase.

Social Vulnerability Survey

As part of the consultations, a survey of social vulnerabilities was conducted in the three participating countries. Results identified a strong social cohesion and local identity with women playing key roles in decision making at the community level. At the local level there were no major relative differences in the access to resources and information between the different ethnicities in the river delta. See the discussion above. Some major findings of the survey are summarized in the table below:

Site	Ethnicity of Beneficiary population	Social strengths	Social vulnerabilities	Measures to account for and address vulnerabilities
Monkey River Delta, Toledo District, Belize	Garifuna Maya	Many Garifuna are educators and hold positions of leadership and management, offering opportunities to connect with community leaders, farmers, and youth within their coastal communities. Maya groups are rich in cultural knowledge compiled over many, many generations, including knowledge of trees and the cultivation and use of many native tree species (C. Coc and P. Mis, MLA). There is a strong ecological ethic among many Maya community groups that are still very closely tied to the forests and lands. Women in both ethnias are respected and hold positions of leadership. Local community associations are strong and recognized. Women are in positions of leadership and very active in community activities.	Relative isolation caused by distances and poor communication networks. Relative poor access to social services. Poor, or non-existent early warning/response systems to the impacts intensification of extreme weather events.	All project activities will be implemented in concert and with participation of local NGOs and through them with community leaders to ensure access to all relevant communities. Project activities will rely on existing community groups and result in additional local income that is expected to result in improvements in livelihoods. Project activities related to warning and response systems will be designed to account for local social conditions and be generally based on the existing mechanisms for social access through participating NGOs. The participation of women in leadership community and communication positions will be used in the local deployment of the warning/response systems
Downstream slopes from Cusuco National Park and associated coastal areas Honduras	Garifuna in coastal areas. Mestizo	Strong ethnic identity amongst Garifuna groups. Awareness of environmental and climate impacts and their consequences for local economic activities Recognition that past deforestation practices have	High poverty rates. Poor integration between different ethnias. Poor integration between elders and youth.	Implementation of project activities will rely on labor and local management. Project activities will rely on existing community groups and result in additional local income that is expected to result in improvements in livelihoods.

		led to impacts in water supply and flooding events. Strong focus on need for land planning amongst community leaders and municipal authorities	Apathy amongst youth caused by limited economic opportunities. Relative poor access to social services. Poor, or non-existent early warning/response systems to the impacts intensification of extreme weather events.	Project activities related to warning and response systems will be designed to account for local social conditions and be generally based on the existing mechanisms for social access through participating NGOs with an emphasis on participation of women, youth and tailored to local conditions in Garifuna areas. .. Communication of project activities will emphasize common exposure to climate impacts and identification of opportunities where joint action is required.
Rio Dulce watershed	Garifuna in coastal areas. Maya Groups. Mestizo population in more urban areas.	Strong community organizations. Sense of identity on Garifuna and Maya groups with solid recognition of role of women. Awareness of environmental and climate impacts and their consequences for local economic activities	Poor, or non-existent early warning/response systems to the impacts intensification of extreme weather events.	Implementation of project activities will rely on labor and local management. Project activities will rely on existing community groups and result in additional local income that is expected to result in improvements in livelihoods. Communication of project activities will emphasize common exposure to climate impacts and identification of opportunities where joint action is required. Project activities related to warning and response systems will be designed to account for local social conditions and be generally based on the existing mechanisms for social access through participating NGOs with an emphasis on participation of women, youth and tailored to local conditions in Garifuna areas.

Specific indigenous groups and women associations consulted in the project areas.

The consultations and the results are summarized above as well as in the main text where Table 9 illustrates how the results from the consultations were incorporated in project design. The table shows an indication of what aspects were suggested by indigenous an women groups in the three countries. Annex III above already lists the women and indigenous groups that participated.

For easy reference, the table below specifies the women and indigenous groups that participated in the consultations in each site.

Country	Women Groups participating in the consultations and subsequent dialogue	Indigenous Groups participating in the consultations and subsequent dialogue
Belice	• TIDE, a majority Maya association led by Celia Mahung and with key leadership positions filled by women. • CZMA, a professional, government organization led by Chantalle Samuels	• TIDE, a majority Maya association led by Celia Mahung and with key leadership positions filled by women. • MRDWA, a majority Maya association, with Garifuna members
Honduras	• MOCAPH Mesa de organizaciones CoManejadoras de Áreas Protegidas de Honduras. A Group of grassroots organizations in North Eastern Honduras led by Candy Alvarado.	• OFRANEH, grassroots organization working with Garifuna (Afro-descendant and indigenous) communities in Honduras. • Community and gender development.
Guatemala	•	• AKTENAMIT, Ak'Tenamit, which means "New Village' in the Q'eqchi' language, is a development project in Eastern Guatemala on the Dulce River. The project includes a school, Healthcare clinic and,

Gender Action Plan.

On the basis of the findings and conclusions of the Gender Assessment a Gender Action Plan has been drawn and integrated into project activities, to be monitored on an annual basis. The Action Plan is summarized in the table below:

Conclusions from the Gender Assessment	Gender Action Plan	Affected project activities
Monkey River Delta		
Women have now high level positions in the district government and in local communities	No specific action required other than to monitor the women's leadership role.	
Need to ensure that women and girls at a community level participate in project activities	All management and labor positions are scheduled to be held by women	All activities under components 2 and 3
Nurseries and seed collection activities offer opportunities for women and girls participation	Nurseries and seed collection activities will seek majority participation of women and girls	Pertinent activities under component 2.
Need to account for cultural differences in role of women amongst ethnic lines.	Participation in project activities will be decided by local communities accounting always for equity participation of women	All activities under components 2 and 3
Rio Dulce		
Need to engage communities already practicing a gender neutral approach to base gender practices on existing experiences and lessons	Participation in project activities will be decided by local communities accounting always for equity participation of women	All activities under components 2 and 3
Nurseries and seed collection activities offer opportunities for women and girls participation	Nurseries and seed collection activities will seek majority participation of women and girls	Pertinent activities under component 2.
Need to strengthen the capacity of local women (and youth) in restoration practices	Training programs emphasize gender equity and awareness	All activities under component 4
Cusuco & Merendon		
Nurseries and seed collection activities offer opportunities for women and girls participation	Nurseries and seed collection activities will seek majority participation of women and girls	Pertinent activities under component 2.
Need to strengthen the capacity of local women (and youth) in restoration practices	Training programs emphasize gender equity and awareness	All activities under component 4
Women are at a great disadvantage in terms of income	Participation in project activities will be rewarded at the same level of compensation independent of gender.	All activities

Project's Grievance Redress Mechanism – GRM –

- The project will adopt as an organizational principle the "Zero Tolerance" to prohibited practices, the adoption of a preventive approach with objectivity, respecting due process and this way fulfilling its fiduciary duty, in addition to achieving development objectives in its operations.
- Also, in accordance with best international practices the project will establish a Reporting Channel as a mechanism to report any fact involving the execution or possible execution of practices contrary to the project's and CABEI's institutional ethical principles, as well as prohibited practices in the context or any activity or operation associated with the products and services financed with the project's funds or with administered funds. Reports about environmental and/or social issues or damages related to the project can be reported as well. Any natural or juridical person, including staff members of the executing agencies may submit a report. The available reporting means are email, website, voicemail and mail.
- The Integrity Committee through the Office of Integrity and Compliance (OFIC) at CABEI's is the responsible for coordinating and administering everything involving the implementation, operation, updating and maintenance of the reporting channel. Also, the OFIC is in charge of coordinating and executing the activities of dissemination, prevention and training about the reporting channel mechanism.
- The Secretary of the Integrity Committee will determinate the competence of the report, when the concern is about Environmental and Social Safeguards that report will be transfer to the Social and Environmental Monitoring Office.

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Annex IV. Terms of References (ToRs) for key project members

Terms of reference for project coordinator

Scope of work

- Oversee and manage project implementation, monitor work progress, and ensure timely delivery of outputs at a country level with emphasis on activities in the target area.
- Report to the regional project coordinating unit regarding project progress.
- Develop and facilitate the implementation of a comprehensive monitoring and reporting system.
- Develop and facilitate the implementation of a comprehensive community engagement plan.
- Ensure timely preparation of detailed annual work plans and budgets for approval by the project coordinating unit.
- Establish linkages and networks with on-going activities by other government and nongovernment agencies.
- Write the management and technical reports, and other documents as described in the M&E plan for the overall project. Reports should contain assessments of progress in implementing activities, including reasons for delays, if any, and recommendations on necessary improvements.
- Supervise the country coordinators.
- Liaise and coordinate with the executing agency (WRI) and CATIE on a regular basis.

Qualifications

- Professional degree in natural resources management, forestry or a closely related field.
- A minimum of 10 years' relevant work experience.
- Demonstrated solid knowledge of environmental and ecological restoration, with an emphasis on water resources management.
- Demonstrated solid knowledge of climate change adaptation management techniques, practices and technologies.
- Experience in working and collaborating with governments and assets.
- Excellent knowledge of English, including writing and communication skills.

Terms of reference for country coordinators

Scope of Work

The three Project coordinators will lead the work in each one of the participating countries and provide overall operational management for the successful execution and implementation of the project within the respective country. The positions' responsibilities include:

- The daily responsibility for management, coordination and supervision of the implementation of the project and delivery of the results in accordance with the full project proposal and work plans.
- Financial management and disbursements, according to consultancies' term of reference and with accountability to the government and the Project Coordinating Unit.

Qualifications

- A professional degree in a relevant discipline, including climate change adaptation, forestry or soil science, environmental and land use management, natural resources management, agriculture, water resources or a related discipline.
- A minimum of five years' experience in a senior technical leadership position with planning and management of environmental and/or natural resources management programmes in developing countries.
- A minimum of five years in a senior technical position involved in institutional strengthening and capacity building.
- Previous similar experiences in provision of technical support and leadership to complex projects.
- Experience working in the GMS would be an advantage.
- Good communication and computer skills.
- Fluent in spoken and written English.

Annex V. List of endorsements and endorsement letters

Endorsement Letter from Belize
(See attached)

Endorsement Letter from Guatemala
(See attached)

Endorsement Letter from Honduras
(See attached)